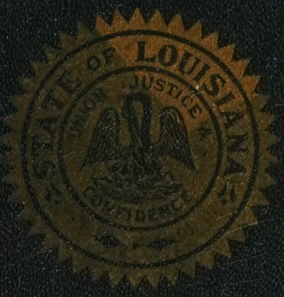
LOUISIANA

A STUDY OF THE STATE



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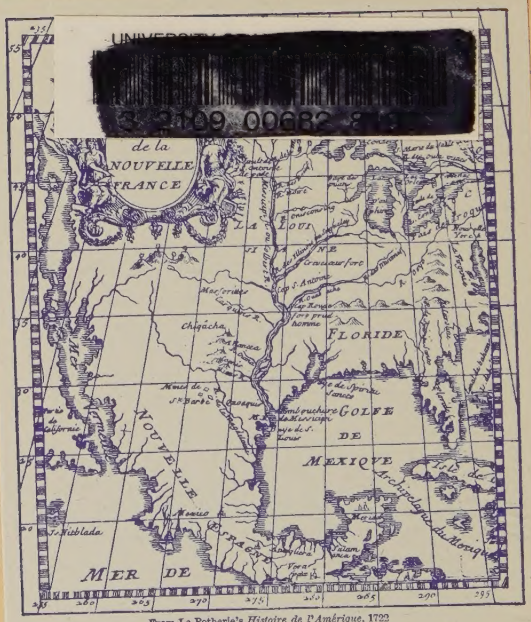

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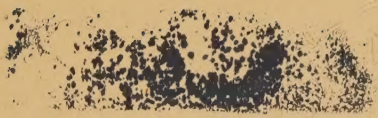

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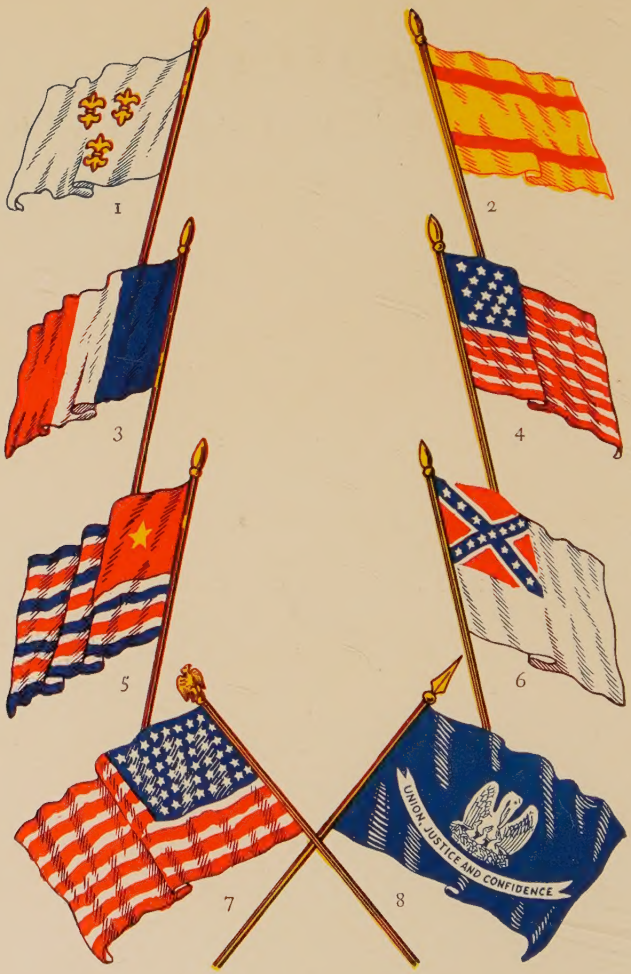

1. Monarchical France
2. Spain
3. First French Republic
4. Flag of the United States in 1803, when Louisiana was ceded to the United States by France
5. State Flag, adopted by the Louisiana Convention which passed the Ordinance of Secession
6. Confederate Flag, Act of Confederate Congress, 1863
7. The present Flag of the United States
8. The present State Flag, adopted by the General Assembly of Louisiana, Act 39 of 1912

LOUISIANA

A STUDY OF THE STATE

BY

MABEL BRASHER

AND OTHERS

JOHNSON PUBLISHING COMPANY

RICHMOND ATLANTA DALLAS

NEW YORK CHICAGO

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LOUISIANA TEACHERS' ASSOCIATION

TO

ALL WHO ARE INTERESTED IN

THE DEVELOPMENT OF A GREATER LOUISIANA

PREFACE

This book is written in response to a demand for a study of Louisiana in our high schools, and is designed to serve as the basis for such a course. Heretofore, no one volume has been available in which data about the more important aspects of the state have been brought together in a form convenient for reference and study. State boards, state institutions, chambers of commerce, municipalities, business concerns, and corporations have published reports and handbooks. However, reliable information on the state — its people and their customs, its topographical features, soil, climate, health, natural resources, industries, waterways, highways, transportation facilities, cities, institutions, and government — has not been put into a form suited to both adult and child.

It would be somewhat presumptuous for any one person to speak concerning these many fields, so widely different; therefore, this volume is the outgrowth of the combined efforts of many persons who have drawn freely upon all available sources of information. No claim is made to originality of content; the task has been one of simplifying expression and arranging material in accordance with the needs of young students. We hope *Louisiana* may prove to be what we have endeavored to make the book — both instructive and useful. As a result of the study of this treatise on Louisiana, we believe that the thousands of young people who annually graduate from

high school will be better prepared for the duties of citizenship. Although we have prepared the volume particularly for high school students, we feel that the general public will find it useful as a handbook of valuable information.

The manuscript was written under the auspices of the Louisiana Teachers' Association, and its publication made possible by the financial aid of Hon. Joseph E. Ransdell, United States Senator from Louisiana, and other public-spirited citizens, to all of whom we gratefully acknowledge our indebtedness.

Since each contribution represents a great deal of research, we wish all our co-workers to receive due recognition. Chapter XIV, Famous Men and Women of Louisiana, was written by Mrs. A. G. Reed of the English Department, Louisiana State University, who is greatly indebted to Colonel T. D. Boyd, President Emeritus of Louisiana State University, and Dean R. L. Tullis of the Louisiana State University Law School for assistance in compiling the lists of political leaders, philanthropists, and literary celebrities; to Dr. J. J. Robert of Baton Rouge for information concerning the famous physicians of the state; and to Mr. R. J. Usher, Librarian of the Howard Memorial Library, who gave valuable assistance in securing data from newspaper files otherwise unobtainable.

Chapter XV, Native Landscape and Wild Life, is wholly the work of Miss Caroline Dormon of the State Department of Conservation. Chapter XVI, The Government of Louisiana, is contributed by Mr. Walter J. Knabe, formerly of the History Department of Bolton High

School, and by State Representative George J. Ginsberg, attorney at law. We thank Miss Agnes Morris of the State Board of Health and Miss Caroline S. Pfaff, District Superintendent, Orleans Parish School Board, for the larger part of the chapters dealing with Health, Transportation, and the city of New Orleans. Thanks are due many who contributed to the chapters dealing with Natural Resources, Agriculture, Manufacturing, and Mining, but special mention is made of Mr. W. B. Mercier, Director of Agricultural Extension Work, Louisiana State University; Mr. E. C. Davis, Specialist in Bee Culture, Louisiana State University; Dr. W. E. Hinds, Entomologist, Louisiana State University; Mr. M. Hull, Assistant Horticulturist, Louisiana State University; State Senator N. C. Williamson, President Louisiana Farm Bureau Cotton Growers' Coöperative Association; Mr. J. B. Schwartz, Superintendent of Maginnis Cotton Mills; and Mrs. S. E. Richardson, formerly of the state's public school system.

We greatly appreciate the assistance of the students in the geography classes of the Louisiana State Normal College, who, under the direction of Professor J. E. Guardia, prepared several graphs and maps; and of Mrs. A. B. Estes, formerly of the state's public school system, who also prepared a number of graphs.

We acknowledge indebtedness to the authors of the works listed as references at the end of each chapter and to those who freely granted permission to use their material. So many citizens of the state have assisted in other ways that it is impossible to mention all. We therefore wish to express our appreciation to each individual, each busi-

ness or civic organization, and each department of government that has so generously responded to requests for information and illustrations. We make special mention of Hon. James B. Aswell, Member of Congress from the Eighth District of Louisiana.

To those who kindly reviewed the manuscript we express our gratitude, particularly to Mr. J. E. Harper, Secretary of the Louisiana Committee, and Miss Alma Burk of the English Department, Bolton High School, and member of the Louisiana Committee, both of whom offered pedagogical suggestions and helped with many details.

To the Chairman of the Louisiana Committee of the Louisiana Teachers' Association, President V. L. Roy of the Louisiana State Normal College, we owe our last word of indebtedness. To him we are obligated for the editing of the manuscript. His untiring energy and steady devotion to the task brought the manuscript to successful completion. To him we wish to express our deepest appreciation.

We are keenly sensible of many imperfections in this treatise. Perhaps some topics not included should have been, and others that are included might have been omitted. Too much space and attention may have been given to certain topics and not enough to others; but we hope that, as the book is used, its defects will be revealed and remedied in future editions.

Mabel Brasher

Alexandria, Louisiana

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CALDWELL
Columbia
DE SOTO
Mansfield
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Coushatta
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Spanish L.
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Harrisonburg
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Catahoula Lake
San Augustine
Pineville
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Alexandria
RAPIDES
River
AVOYELLES
Marksville
Leesville
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Fullerton
Lecompte
Jasper
Newton
Glenmora
Bunkie
Woodville
Merryville
Elizabeth
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Pointe a la Hache
Ft. Jackson
Pass A L'Outre
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Mississippi Sound
Lake Borgne
Lake Maurepas
Lake Providence
Tallulah
Greensburg
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Donaldsonville
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Terrebonne Bay
Timbalier Bay
Barataria Bay
Bayou Lafourche
Intracoastal Canal
Greenwich
South Pass
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Y. & M.V.
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Pearl R.
Tangipahoa R.
Amite R.
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L. des Allemands
L. Salvador
91°
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CONTENTS

PAGE

PREFACE v

CHAPTER

I. INTRODUCTION 1

Purpose and Scope of the Treatise.

II. HISTORY, PEOPLE, AND CUSTOMS 5

Early history; Colonization; Statehood; War of 1812; Era of prosperity; War with Mexico; Confederacy and reconstruction — People: Composition and characteristics; Number and distribution; Religious affiliation; Plantation life — Customs: Mardi Gras; All Saints' Day; Lagniappe — References.

III. PHYSICAL FEATURES 25

Geological History: The surface features; The elevated lands; The lowlands; The coast line; The lakes and bays; Mounds; Reclaimed land — Soil: Classification; Soil conservation — Climate: Temperature; Moisture; Winds — References.

IV. INLAND WATERWAYS 52

The Mississippi River; The Red River; The Atchafalaya River; The Black River; The Calcasieu River; The Sabine River — Minor Streams — Bays and Lakes — Canals: Intracoastal Canal; Inner Harbor Navigation Canal — References.

V. TRANSPORTATION AND COMMUNICATION . . . 77

Railroads; Telephone and telegraph lines; The port of New Orleans; Steamship lines,

CHAPTER PAGE

steamboats, and barges; The highways; Trucks and buses — References.

VI. Natural Resources 94

The forests; Oil; Gas; Sulphur; Salt; Other minerals; Wild-life resources; The oyster; The shrimp; The alligator; Fur animals; The muskrat — References.

VII. Agriculture and Allied Industries . . 129

Importance; Land utilization; Louisiana soils; Variety of crops — The Major Crops: Cotton; Sugar cane; Corn; Rice — Other Farm Crops — The Bee Industry — Fruits and Nuts: Citrus fruits; Figs; Orchard fruits; Pecans — Animal Industries: Live stock; Cattle; Dairying; Horses and mules; Hogs; Sheep; Goats; Poultry — References.

VIII. Lumbering and Allied Industries . . 158

Lumbering; Turpentine, rosin, tar; Distillation of wood; Paper pulp; Mill work; Furniture making; Toys; Wood preserving — References.

IX. Mining, Fishing, and Trapping . . . 174

Mining: Petroleum; Location and boring of wells; Storage and transportation; Oil refining; Natural gas; Carbon black; Salt; Sand and gravel; Clay; Limestone — Fishing: Economic importance; Oysters; Shrimp; Canning and by-products; Other shellfish; Fresh-water fishing; Fish protection — Trapping: Economic importance; Varieties; Muskrat ranching — References.

X. Manufacturing 190

Introduction; Influence of raw material; Influence of power; Influence of labor; In-

CHAPTER PAGE

fluence of capital; Influence of market; The International Trade Exhibition — 1. Manufacture of Vegetable Products — Sugar: Economic importance; Refining; Location of mills; Molasses; Syrup; Celotex — Rice: Milling; Economic importance — Cotton: Ginning; Compressing; Cottonseed oil milling; Cotton mills; Clothing; Bags; Food products; Tobacco; Moss — 2. Manufacture of Minerals: Metal works; Shipyards and dry docks; Brick, clay, and concrete; Glass making; Fertilizers; Drugs and chemicals — 3. Manufacture of Animal Products: Slaughtering and meat packing; Leather; Creameries — References.

XI. New Orleans — America's Most Interesting City 213

History — The Geography of New Orleans — Industries — Uniqueness of New Orleans — Other Points of Interest — References.

XII. Other Cities and Towns 239

Shreveport — Baton Rouge — Alexandria — Monroe — Lake Charles — Bogalusa — Lafayette — Minden — New Iberia — Ruston — Natchitoches — Hammond — Morgan City and Berwick — De Ridder — References.

XIII. Health 260

State Board of Health; The subjugation of yellow fever; Progress in health matters; The fight against malaria; Health trains; State sanitary code; Other health measures; Health in Louisiana compared with other states.

XIV. Famous Men and Women of Louisiana . 270

In the Field of Education: Alexander Dimitry; William Preston Johnston; David F. Boyd; J. W. Nicholson; W. H. Dalrymple;

CHAPTER PAGE

John McNeese; C. E. Byrd; Hardy H. Hargrove — In the Field of Philanthropy: Julien Poydras; Alexander Milne; Judah Touro; John McDonogh; Paul Tulane; Isaac Delgado; Isidore Newman; Mrs. Louise Lemonnier Newcomb; Mrs. Ida Richardson; Mrs. Walter Parrott; Margaret Haughery — In Political Leadership: Edward Livingston; Henry Watkins Allen; Edward Douglas White; Thomas J. Semmes; William Wirt Howe; Francis T. Nicholls; Donelson Caffery; Murphy J. Foster; Edgar H. Farrar; E. B. Kruttschnitt — In the Field of Social Work: Sophie B. Wright; Dr. Benjamin Palmer; Dr. Beverly Warner — In Military Leadership: Leonidas Polk; Braxton Bragg; P. G. T. Beauregard; Richard Taylor — In the Field of Medicine: Dr. S. E. Chaille; Dr. Marion Souchon; Dr. Tobias G. Richardson; Dr. S. M. Bemiss; Dr. Joseph Jones; Dr. Joseph Holt; Dr. M. A. Miles; Dr. A. W. Smythe; Dr. Ernest S. Lewis — In Literature and the Arts: François Xavier Martin; Charles Gayarré; Richard Henry Wilde; George W. Cable; Alcée Fortier; Louis Moreau Gottschalk; Henry Richardson; James Gallier; Sarah Ellis Dorsey; Mary Ashley Townsend; Eliza Jane Poitevant Nicholson; Kate Chopin; Mollie Moore Davis; Ruth McEnery Stuart; Catherine Cole; Mrs. C. V. Jamison; Eliza Ripley — Three Unusual Men: John James Audubon; Étienne de Boré; Paul Morphy — References.

XV. Native Landscape and Wild Life . . 306

Forests; Wild flowers; Animals; Birds; Wild-life sanctuaries; Beauty of waterways; Fisherman's delight — References.

CHAPTER PAGE

XVI. The Government of Louisiana . . . 327

Louisiana governed under constitution; Bill of Rights; Division of powers; Legislative department; Procedure; Features; Committee system; Executive department; Judiciary department; Judges elected; Department of justice; Parish government; Municipalities; Conservation; Tax Commission; Highway Commission; Public Service Commission; Other boards and officers; State school system; Local boards; Voting; Louisiana shares in national government — Origin of Louisiana Laws: Peculiarities — References.

XVII. Educational and Other Institutions . . 349

Public School System: Historical; Organization and administration; School revenues; Twenty-five years of school progress; Colleges and universities — State Institutions of Learning: Louisiana State University and Agricultural and Mechanical College; Louisiana State Normal College; Louisiana Polytechnic Institute; Southwestern Louisiana Institute; Special schools: State School for the Blind; State School for the Deaf; Louisiana Training Institute for Boys; Louisiana Training School for Girls — Endowed and Denominational Colleges and Universities: Tulane University of Louisiana; The H. Sophie Newcomb Memorial College; Loyola University; Louisiana College; Centenary College; Ursuline College; St. Mary's Dominican College; Mansfield Female College; Silliman Institute; Dodd College; Isidore Newman Manual Training School; Isaac Delgado Central Trades School; Francis T. Nicholls Trades School — Higher Education for Negroes: Southern University and Agricultural and Mechanical College;

CHAPTER PAGE

Leland University; New Orleans University; Straight University; Xavier University — Hospitals: The Charity Hospital of Louisiana; Shreveport Charity Hospital; Eye, Ear, Nose, and Throat Hospital; Shrine Hospital for Crippled Children; Touro Infirmary; Hotel Dieu; Presbyterian Hospital; Baptist Hospital (New Orleans); Schumpert Memorial Sanitarium; North Louisiana Sanitarium; Highland Sanitarium; Tri-State Sanitarium; Baptist Hospital (Alexandria); Lady of the Lake Sanitarium; St. Patrick's Sanitarium; St. Francis Sanitarium; Riverside Sanitarium — Other Institutions of the State: East Louisiana State Hospital; Central Louisiana State Hospital; The State Colony and Training School; The National Leprosarium; Louisiana State Penitentiary — References.

XVIII. Conclusion 371

Appendix 377

Index 417

LOUISIANA

Louisiana's State Flower, the Magnolia

CHAPTER I

INTRODUCTION

Purpose and Scope of the Treatise

In 1860 Louisiana was perhaps the richest of all the Southern States and in per capita wealth she undoubtedly excelled the average for the nation as a whole. Our wealth was largely destroyed by the War Between the States and, though much progress has been made since those unhappy days, we no longer excel in this respect (Appendix, Table 1). We concede this without envy and rejoice with our sister states in the progress they have made, but we believe that a fuller knowledge of Louisiana will result in increased interest in the resources of our state and a deeper appreciation of its growth and development.

People coming into the South to escape the hardships of the long cold winters of the North not only found a land of sunshine; they discovered a land of business opportunity as well. They learned that many of their lifelong impressions regarding the South were erroneous. Seeking primarily refuge from the cold, they discerned investment possibilities and began to scrutinize the entire group of Southern States. Many advantages were revealed and there followed a trend of population southward. Other states have profited by this movement and we gladly acknowledge Louisiana's share of these benefits. Millions of dollars have been invested in the state by

Northern and Eastern capitalists. New industries have been established; others are being established. Our cities are growing rapidly; our rural population is keeping pace with that of the cities. Students of economic and industrial conditions feel that a " tide of population " is setting southward and that the superior natural advantages existing in Louisiana will encourage even greater increase in population and capital investment during the next few years. We need more citizens; we need more capital. The coming of both will hasten the day when Louisiana shall rank with the most advanced states in social and economic life.

We have great natural resources, a wonderful climate, and points of excellence in government, education, and industry. In the past, our fathers, when speaking of Louisiana's advantages, have been most modest lest they should be accused of boasting. The time has come when we should cast off this false modesty concerning the things of which we are proud, when we should study Louisiana's manifold advantages and possibilities, in order that we may more fully understand and appreciate our state. Thorough enlightenment in many respects is essential in preparing a citizen for the new era before us.

There was a time not long past when environment was simple and life was much less intricate and involved. People were concerned almost entirely with their own immediate needs, wresting from their simple surroundings such materials as were necessary to supply their wants. As vehicles of intercourse multiplied, information and fellowship became more cosmopolitan. The steamship, the railway, the airplane, and other improved means of

communication have brought the peoples of the world so close together that man can no longer live for himself alone. Human beings, formerly separated by what appeared to be unconquerable distance, are now learning to be neighbors. Peoples are interdependent as never before, and social and industrial theories and practices of the past are being recast for the new era. Knowledge is increasing; understanding is being clarified. Individuals, communities, states, and nations, in their upward course, are learning the meaning of the brotherhood of man.

To succeed in this new era, man must not only be familiar with local conditions, but he must also know his home state in its national and world setting. He must consider his community and state, not separate and apart from other communities and states, but as an integral part of one big unit, the world.

It is the purpose of this book to present such facts concerning Louisiana as will serve to prepare boys and girls for the duties of this changed environment. The different aspects are treated under the following divisions:

1. A brief historical sketch of the state and its people, including short biographies of some of our distinguished citizens.
2. The physical features which make Louisiana a desirable state in which to live.
3. The economic relation of Louisiana to the nation and to the world as a whole; the location and development of the natural resources.
4. The social conditions, government, and culture.
5. The unique and picturesque features.

We know that the day has arrived when the human element plays a greater part in a state's development than do its material resources; we know also that a state prospers only when its citizens are definitely awake to its problems and possibilities; and we believe that all who intend manfully to assume the duties of citizenship and carry forward the work in which the present generation is engaged will appreciate the opportunity this volume presents for a comprehensive study of Louisiana.

CHAPTER II

HISTORY, PEOPLE, AND CUSTOMS

Early history. Louisiana is one of the regions of the United States that were visited early by European explorers. Its discovery and colonization were not only interwoven with European history but, to a marked extent, controlled the policy of some of the leading rulers of Europe.

Some historians cite as the oldest recorded knowledge of Louisiana a Spanish map dated 1502, on which in crude outline may be deciphered the three familiar channels of the mouth of the Mississippi. After the voyage of the early explorers, Pineda, De Narvaez, and De Soto, Louisiana seems to have been forgotten for one hundred and thirty-two years, until La Salle sailed down the Mississippi and claimed the vast river basin in the name of Louis XIV.

Again the new territory was for a time forgotten in Europe on account of the War of the Holy Alliance. After the treaty of peace was signed, Iberville was sent to colonize the territory.

Colonization. Iberville, accompanied by his younger brother, Bienville, and Lieutenant Sauvole (both of whom later became governors of Louisiana), founded a colony at Biloxi, Mississippi. The military government of the colony gave way in 1712 to a proprietary form of government established by Antoine Crozat. During his owner-

A Courtyard of Old New Orleans

ship the first settlement in what is now Louisiana was founded at Natchitoches (1714) by St. Denis in an attempt to open trade with Mexico.

After Crozat resigned his charter, Louisiana went into the hands of a corporation entitled the Company of the West, later known as the Company of the Indies. New Orleans was founded in 1718 and, because of its many advantages of location, soon (1722) supplanted Biloxi as the capital of the province. The colony at once began to be self-sustaining.

As the Indian War threatened the peace, prosperity, and life of the colony, the corporation was glad to re-cede Louisiana to the king of France (1731).

In 1763 France ceded New Orleans, with the adjacent district and all her territory west of the Mississippi, to Spain and her domain east of the river to Great Britain. A year of turmoil followed. Later Spanish rulers tried to make their nation and government acceptable to the colonists, but Louisiana never became Spanish in interest or intent.

While the thirteen American colonies were in revolt against Great Britain, France acknowledged the independence of the United States and entered into relations of reciprocal friendship with them. By Great Britain this act was considered equivalent to a declaration of war. Hostilities had begun when Spain offered her mediation and proposed a meeting at Madrid of the Ministers of Great Britain, France, and the United States. When Great Britain declined, the king of Spain decided to take part in the war. Spanish troops from New Orleans captured the British settlements near Baton Rouge.

Availing themselves of the rupture between Spain and Great Britain, the American Congress sent a minister to Madrid to negotiate a treaty which would include particularly the recognition of the independence of the thirteen colonies and the right to navigate the Mississippi River to the Gulf of Mexico. The minister failed in his negotiations. In 1783, however, ambassadors of Spain, England, France, and the United States signed a treaty recognizing the independence of the colonies and fixing the southern boundary of the United States at parallel 31 degrees north, which marks the northern boundary of our Florida parishes.

In 1800 Louisiana was restored to France and since she, like Spain, did not concede the right of the United States to navigate the entire length of the Mississippi, the commerce of the settlers of the upper valley was greatly handicapped. To secure a site for a commercial depot near the mouth of the river was essential, and Thomas Jefferson, President of the United States, authorized Monroe and Livingston to negotiate for the purchase of the Island of Orleans. France was unwilling to dispose of the island alone, but offered the whole of the Louisiana Territory for $15,000,000. On November 30, 1803 the formal transfer was made, and twenty days later the Stars and Stripes supplanted the French flag. The keys of the city were turned over to William C. C. Claiborne, who served as governor of the Territory of Orleans for eight years and, by vote of the people, later became the first governor of the state of Louisiana.

The Territory of Orleans was divided into twelve counties; later into nineteen. The name county was

changed to parish because the old Spanish division for religious purposes was used as the basis in fixing boundaries.

When Louisiana became American territory, Spain refused to surrender the district north of Lake Pontchartrain, east of the Mississippi, and west of the Perdido River, declaring she had not yielded this to France. Spanish garrisons were kept at Baton Rouge and Mobile. The inhabitants of the Baton Rouge district were largely Americans who had come by boat from the Mississippi and Ohio river valleys and by pack horse from Virginia and the Carolinas. They disliked the government of Spain and made two attempts to seize the fort, the second of which (1810) was successful. A convention was held at Baton Rouge, the Territory of West Florida was declared independent, and a constitution framed. At the request of the people living in this territory the president of the United States took the territory under his protection as part of the Territory of Orleans.

Statehood. On April 8, 1812 Louisiana was admitted into the Union. The Baton Rouge district as far as the Pearl River having been added soon thereafter, the boundaries were fixed as they stand today.

War of 1812. About two months after Louisiana was admitted to the Union, the United States declared war against Great Britain. For two years the war went on without any decisive battles on either side. The British marched against Washington and burned the Capitol but the Americans were successful on the sea. The British transferred the seat of war to the Gulf of Mexico, and New Orleans became their main objective. General

Andrew Jackson commanded the American forces, Sir Edward Pakenham, the invading army. Preliminary skirmishing checked the progress of the British and gave Jackson time to fortify the plain of Chalmette.

Chalmette Monument

This monument marks the site where, on January 8, 1815, the battle of New Orleans was fought.

On January 8, 1815 the British made a final attempt to storm Jackson's breastworks, which extended along a canal from the Mississippi River back to a cypress swamp. As the fog that covered the plain lifted, the American troops opened fire, and the river batteries broke the advancing British lines. Column after column marched against the Americans and was repelled with great slaughter. The British lost two thousand men and their

commanding officer; the Americans, only twenty-one men. Never in a great battle was there such a disparity of losses. Had there been telegraph and cable lines in those days such bloodshed would not have occurred, as a treaty of peace had been signed December 24, 1814 at Ghent, Belgium.

Era of prosperity. During the years 1812–1815 Louisiana incurred great financial losses, but after the close of the war there came an era of commercial and agricultural activity resulting in general prosperity. The population increased so greatly in two years that stringent laws became necessary to curb the wild and lawless element. Gradually, disorder and violence gave way to the reign of law. Several factors made possible the era of general prosperity, among which should be mentioned the invention of the cotton gin, the building of a steamboat that could stem the current of the Mississippi, and the discovery by Étienne de Boré of the process of granulating sugar. Indigo and tobacco, Louisiana's main crops for many years, were soon outstripped by cotton and sugar; boats bringing products from the upper valley took back products brought into New Orleans from European countries. New Orleans became the South's leading commercial center for both raw and manufactured products. Steamboat traffic increased through a period of fifty years and was at its peak at the outbreak of the War Between the States. Steamboats were luxuriously fitted up for passengers, the main deck consisting chiefly of a great dining salon down the center with spacious cabins on either side. The lower deck and hold were piled with freight.

After 1850, with the building and extension of railroads, passenger and freight traffic on the rivers gradually dwindled; and two or three decades later the railroads became the chief arteries of transportation. After 1880 river traffic rapidly decreased, although for some years inexpensive fleets of barges continued to carry freight. Today the railroads find their chief competitors for trade in the motor trucks that are gradually gaining control of a great part of the local freight traffic, and less important but menacing competitors in the modern river barges recently reëstablished on the Mississippi.

War with Mexico. When river commerce was at its height, war was declared between the United States and Mexico. General Zachary Taylor, who owned an estate near Baton Rouge, was sent with a small army to defend the border. Other troops followed and among them were many sons of Louisiana who rendered distinguished service. General P. G. T. Beauregard was one of these.

Confederacy and reconstruction. On January 26, 1861, Louisiana seceded from the Union and joined the Confederacy. At the beginning of the War Between the States the strategic importance of New Orleans became evident. Its possession was one of the earliest objectives of the Federal government. In both military and naval operations, Louisiana experienced some of the hardest struggles. As the Federal forces occupied the southern part of the state, with headquarters at New Orleans, the capital was removed first to Opelousas, then to Alexandria, and finally to Shreveport. Important battles were fought on Louisiana ground. Homes, cotton gins, and

sugar mills were burned, fields laid waste, and valuable records destroyed; and thousands of Louisiana's bravest sons died on the battlefield. Thus handicapped by the loss of her man power, Louisiana's recovery was seriously retarded until her young boys grew into manhood. Many of these boys, left to support widowed mothers and sisters, were never enrolled in school, and many attended school only a few months.

As awful as the war itself was the period which followed. Southern Democrats who had taken a prominent part in the war were not allowed to vote; adventurers from the North controlled the government; long-continued excitement and conflict prevailed. Conditions grew so unbearable that leading men in various parts of the state formed the White League and rescued the government. Finally, in the election of 1876, many of the newly freed colored people who had felt it their duty to support the Republican party, which had abolished slavery, now realized the inferiority of the "carpetbagger" and voted with the Democrats. Thus F. T. Nicholls was elected governor in 1876 by a majority of eight thousand.

The heroism of those who experienced the great struggle of the sixties is a glorious heritage, but equally great is that of the strenuous efforts of our fathers and grandfathers to whom belongs the glory of bringing Louisiana back to its proper place in the social and industrial life of America.

Great obstacles were met and overcome. Among the greatest of these were the epidemics of yellow fever and the seasonal overflow of the Mississippi River, of which

more is said later. The record of continuous growth and development shows a great increase in population, exten-

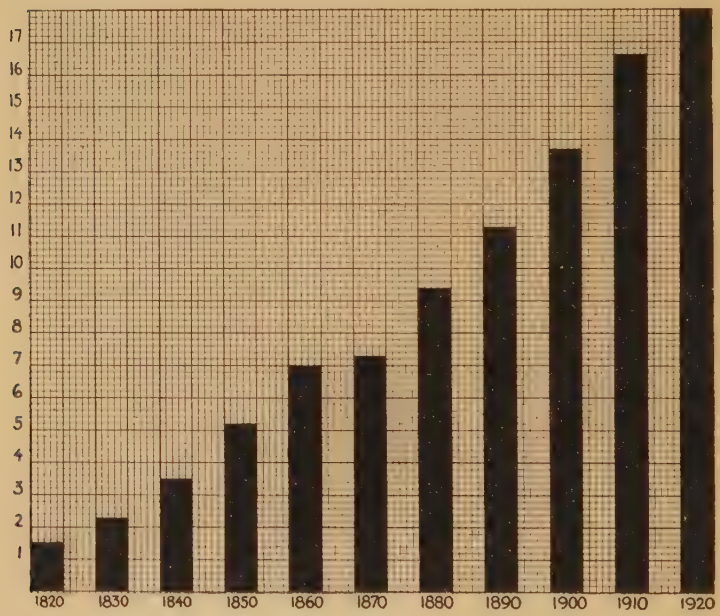

Figure 1. Population of Louisiana during each census year from 1820 to 1920, inclusive, in hundreds of thousands. From United States Census

sion of industry, increase of agricultural production, the discovery of mineral wealth, the construction of railways, the building up of an efficient school system, and the improvement of law and government. Prosperity, broad, substantial, and growing, proclaims the progress of Louisiana (Appendix, Table 4).

People

Composition and characteristics. Let us bear in mind that in America the Indians are the aborigines and all other races are immigrants. Indeed, almost every one of us would find, if we should inquire, that either our parents or grandparents, or at least their parents or grandparents, were immigrants to Louisiana.

Many nationalities are represented among the early settlers of Louisiana. The very earliest settlers came from France and Spain. Many of these were men of rank, breeding, and courage, members of some of the oldest and finest European families. They were well educated, cultured, and refined. In the delightful social customs instituted by them is found the true origin of the exquisite charm which characterizes Creole society of the higher type in Louisiana today.

In contrast to these merry-making people were the conservative Acadians, who, having been expelled from their Canadian homes, found refuge in Louisiana, where they toiled in peace and quiet. Arrangements were made whereby they settled the vast and unsurpassed grazing area of southwestern Louisiana, the Attakapas prairie, so named from the "man-eater" Indians originally inhabiting the locality. The sensitiveness and aloofness of the young Acadians soon gave way to confidence, and there was no bound to the loyalty of their friendship or to the hospitality of their homes.

Among the very early settlers should be mentioned also the thrifty Germans, a band of whom, becoming dissatisfied with their location in southeastern

Arkansas, moved to the banks of the Mississippi above New Orleans, a section thenceforth called the "German Coast."

About the time of the Revolutionary War there came to Louisiana, by pack mule or horse, people from Virginia, Georgia, and the Carolinas, bringing with them the culture and refinement of the homes they or their parents had left in Europe. These were of Irish, Scotch, English, and, sometimes, Huguenot descent. The French and Spanish settlers gave the name "Americans" to these and other English-speaking people who came from the north by river or road (Appendix, Table 2).

The foreign-born population of Louisiana includes people from every country in Europe, from Canada, Latin America, and portions of Asia. Of the Europeans, the French, Italians, and Germans are the most numerous. These have entered all occupations and professions. Among the immigrants from the Orient, the Chinese and the Japanese are the most numerous. They are found in laundries, restaurants, curio and pawn shops, or are employed in the shrimp industry on the coast. Colonies of Mexicans and Japanese are also engaged in agriculture in certain sections of the state.

According to the United States census of 1920, about 39 per cent of Louisiana's population are negroes and 61 per cent whites, of whom almost all are native born. Those of foreign and mixed parentage are generally good citizens and Louisiana faces no such social and industrial problem as is found in some of our states.

Number and distribution. Figure 2 indicates the density and distribution of population in 1920.

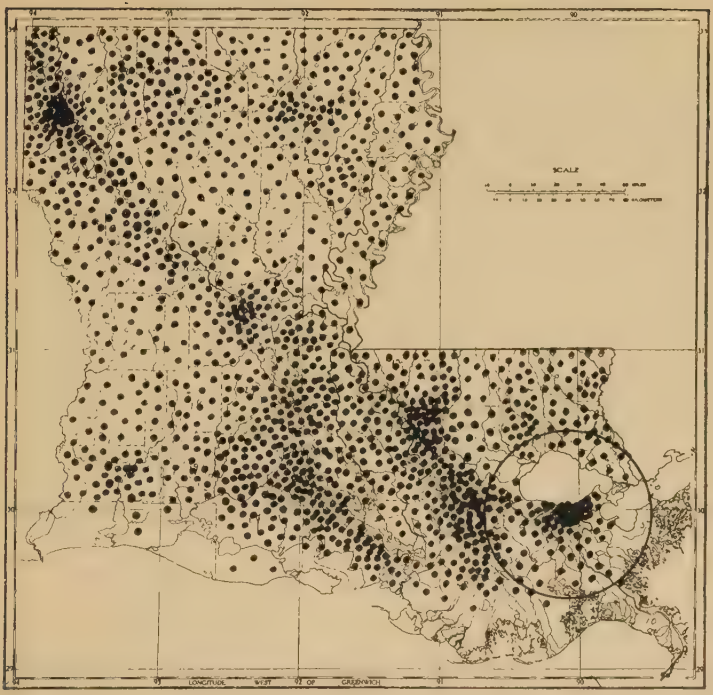

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Figure 2. Distribution of population in 1920. Each dot represents 1000 people. The circle around New Orleans is in proportion to its population (387,219). From United States Census

Religious affiliation. In 1926 there were in Louisiana 55 religious denominations having an aggregate membership of 1,037,000, as compared with 44 denominations and 863,067 members in 1916. The total expenditures were $814,371,529, as compared with $328,809,999 in 1916.

Perhaps in no other state is there a more tolerant attitude in religious matters; in civic affairs and in industry, men work side by side without contention as to creed or belief. According to the United States census report on religious bodies, the leading denominations in Louisiana and their membership are as follows:

	1916	1926
Roman Catholics	509,910	587,946
Baptists	213,018	255,903
Methodists	81,273	111,653
Episcopalians	11,632	17,175
Presbyterians	9,636	16,400
Jews	4,284	13,845

Plantation life. The cotton gin and sugar refinery provided the means for the maintenance of the large and magnificent plantations and plantation homes which were developed in Louisiana in ante-bellum days. These great agricultural plants were once the biggest business operations in the state. They were the centers of capital investment, of executive leadership, of culture and, as such, were predominant in the life of the people.

The planters were the prominent men of the community. Their judgment was sought in times of trouble. Counsel, advice, and financial assistance were generously given. No security was asked. A man's word was as good as his bond.

The most magnificent of the plantations were found in the rich lands of the river valleys. Great estates, comprising sometimes thousands of acres of the finest land on the earth, were owned by individuals and operated with slave labor. Each was a complete industrial, civic,

An Old Southern Home, Built about 1788

and social organization within itself. The owner was master and under him were overseer and assistants who directed his slaves.

Slaves were property and so, as it is good business to preserve property in good condition, the slaves were well fed, their health carefully guarded, and their contentment and happiness promoted. In some cases, no doubt, the masters were severe and even cruel, but on the whole they were kind and the plantations rang with the melodies of contented workers.

Fertile soil, genial climate, and slave labor, particularly adapted to the production of cotton and cane, resulted in large revenues. The harvested crop was shipped by boat to New Orleans and sold by the commission mer-

chant, who also attended to the buying of necessary supplies.

The master's house was a mansion. Nothing was spared in its comfort or appearance. Many of these splendid structures are standing today as monuments of a brilliant age that is past. Education and culture, commensurate with wealth and good taste, characterized the owners of these fine estates, and one cannot pass the site of an old plantation home today without reverence and admiration. Broad surroundings, vast rooms, spacious galleries, grand columns, magnificent trees, ample shrubbery, and gorgeous flower gardens — all set in exquisite balance — proclaim the spirit of a proud and prosperous people.

With the freeing of the slave, the economic factor upon which former plantation life rested was destroyed and the structure fell. The great plantation as it was in pre-war days is no more. The vast estates are being broken up into small farms, and it is generally agreed that this foretells a better day.

Customs

Of the many customs typical of Louisiana, three deserve special mention: the celebration of Mardi Gras, the observance of All Saints' Day, and the giving of lagniappe (lăn-nyăp′).

Mardi Gras. Carnival, a period of feasting and revelry prior to Lent, is the gayest season in New Orleans. Adopted from the Carnival of Paris, it has been so greatly improved upon that today throughout the world Carnival belongs distinctively to New Orleans. The period of

revelry formally opens twelve nights after Christmas with a symbolic tableau and ball given by the Twelfth Night Revelers. A succession of magnificent parades and balls, all *en masque*, leads up to the grand finale. Revelry and merriment reach their climax on Mardi Gras night, ceasing at midnight, when the tolling of the chimes of the St. Louis Cathedral proclaims a period of solemnity and self-denial which lasts through Lent.

Among the numerous secret organizations responsible for Carnival festivities, the best known are the Krewes of Momus, Proteus, Rex, and Comus. The Mystic Krewe of Comus came into being in 1852, and is the oldest of these organizations. The Rex Society and the Krewe of Momus were organized in 1872, the Krewe of Proteus, in 1882. These four are responsible for the parades and balls given during Mardi Gras week. On Tuesday before Ash Wednesday the entire city is for the time ostensibly placed under the control of " Rex," king of the Carnival. Upon his arrival from distant seas, he receives the keys of the city and a day parade follows. Tuesday night Rex gives his ball, and at 11 o'clock he and his court formally join the court of Comus — the God of Good Cheer. The grand march following is one of the most spectacular events in the social life of the United States. On this day the Druids, a fraternal organization, also parade with elaborate floats after Rex. Virtually all citizens are in the streets to view the long array of exquisitely designed floats. Some of the people are masked and costumed; others are watching with hearts and minds at play; the novel costume, the flash of gay color, and the spirit of joy put care aside, and everyone plays. The

Carnival Pageant in Canal Street

Note the hands extended to receive souvenirs distributed from the float.

glittering pageants, however, are not merely entertaining; they are instructive as well, presenting scenes from history, literature, or the arts.

All Saints' Day. Consecrating November 1 to the memory of the dead is a custom of Catholic origin, dear to every Louisianian. On All Saints' Day, from early morning till dusk, throngs of people move quietly about in the cemeteries and place floral offerings on the graves of their loved ones. Chrysanthemums are the favorite flower used and so beautiful is the display that many persons visit the cemeteries to view the gorgeous blossoms.

Lagniappe. A custom especially appreciated by small children is that of giving lagniappe. When the housewife settles her account at the end of the week or month, the groceryman remembers her with some gift, often fruit. To the child sent to make a purchase he gives, perhaps, a stick of candy for lagniappe. This custom is practically unknown elsewhere in the Union.

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CHAPTER III

PHYSICAL FEATURES

Louisiana, the southernmost state of the Mississippi Valley, has an area of 48,506 square miles, which includes many landlocked bays, lakes, and other water surface as well as about 45,409 square miles of land. The diversity and sharp contrasts of land surface never fail to attract the attention of a stranger unfamiliar with the geological history of the state. By merely rounding a curve or crossing a stream one drops abruptly from elevated hill land into the low bottoms. The elevations are not great, as compared with those of other regions, but the slopes are a signally striking feature. The high areas, either level or undulating, are quite similar to the surface of the Great Plain States. The high rugged hills with steep and narrow valleys are easily suggestive of a mountainous region. To understand the diversity of surface, a brief survey of the formation of the land is necessary.

Geological History

Louisiana is a part of the great Atlantic Coastal Plain. Ages ago an arm of the Gulf extended as far north as the mouth of the Ohio River, covering all of Louisiana and parts of several other states. Into this portion of the Gulf, for thousands of years, the Mississippi River deposited an immense mass of material gathered from the

higher lands along its tributaries and formed a sea-bottom plain.

There were several major stages or eras in the formation of this portion of the great Atlantic Coastal Plain. In some eras there was a gradual uplift and again a slow subsidence of the sea-bottom plain. During other eras there occurred long breaks or "faults," many of them extending for miles north and south, others east and west. There were also alternate periods of elevation and erosion, and finally a period of comparative rest from subsidence and uplift. Some eras were characterized by comparatively swift crustal movements, others by a long continuance of sunken or sinking surface conditions.

As the sea receded from the more or less irregular deposits, drainage water from the Mississippi Valley washed out for itself channels across these deposits to the sea and redistributed the great blanket of silt, sand, and gravel of the newly emerged coastal plain. During this period of erosion and readjustment large amounts of gravel were deposited along many streams. At various flood times the water rose above the level of the banks of the rivers and overflowed the surrounding lowlands. A deposit of sediment was spread upon the surface; the succession of such deposits from this source raised the general level as broad floors or flood plains of the rivers. Near the streams flood plains were built higher, forming the "front lands" of the heavy materials. Relatively small amounts of fine-grained silt, carried farther back from the river's bank, built up the lower, stiff "back lands." The territory lying south of the Red River and between Bayous Bœuf and Teche on the west and the

GRAND ECORE

Note the high bluff on one side of Red River and the bottom lands on the other side.

Mississippi River on the east was thus formed of soil washed from the surface of many states and deposited here by the Red and the Mississippi rivers.

Near their banks, the tributaries, like the main stream, built flood plains higher. Between the natural embankments of the trunk stream and those of the tributaries were formed low basins, more or less saucer shaped.

After an uplift, the rivers began at once to sink their channels and to make new river banks at lower levels. This produced a new flood plain with bordering bluff and terrace above. As a result we have what are called the first-bottom land and the terraces, or second bottoms. Some rivers have third bottoms.

A river with a swift current maintained its course in a relatively straight line, but in proportion as its current became sluggish, the stream was turned aside by the least obstruction and became a meandering stream. Once diverted from its direct course, the current was thrown toward one side where it scoured the banks, and the winding of the stream began. The meandering stream, by cutting on the outer or convex side of its bends and depositing on the inner side, steadily became more and more serpentine while it maintained about the same width from bank to bank. Continued erosion of the banks so narrowed the neck of land separating the meanders that a pronounced rise in the water level directed the current across the intervening neck, and a new channel was scoured out. After the cut-off had occurred, the old channel filled with silt at both ends and became a lake entirely separate from the new channel.

Along the Gulf coast, land formation today continues precisely as in earlier geological times. The sand and silt swept into the sea are checked by the waves, transported shoreward by currents, and built into ridges that in some places rise to a height of ten feet above mean tide. Especially during storms are long parallel sand ridges formed. With the forming of the ridge, mud and silt from inflowing streams begin transforming the inclosed basin into land. During periods of low water many sections near the Gulf are exposed mud flats; others are shallow basins less than ten inches deep. Such areas pass through the sea-marsh stage and, after a slight elevation of the whole region, into crawfish prairies. Extensive low plains of such land are found west of the Atchafalaya River, while east of the Mississippi River prairies appear here and there.

In passing from the coast inland one notices several of the above described ridges formed in earlier times. Trees are found on the larger ridges. As erosion takes place, those growing near the water's edge slough off into the marshes. Sluggish bayous, meandering along the landward border of the ridges for some distance before breaking through on their way to the Gulf, have often laid bare a stratum of cypress and other kinds of logs and stumps three or four feet beneath the present surface of the marsh. Drillings show that, after passing through perhaps thirty feet of mud, another stratum of logs and stumps may be found. Deeper drillings reveal the same evidences of former marsh conditions even at a depth of eighteen hundred feet or more, showing that this deep stratum was once at the surface.

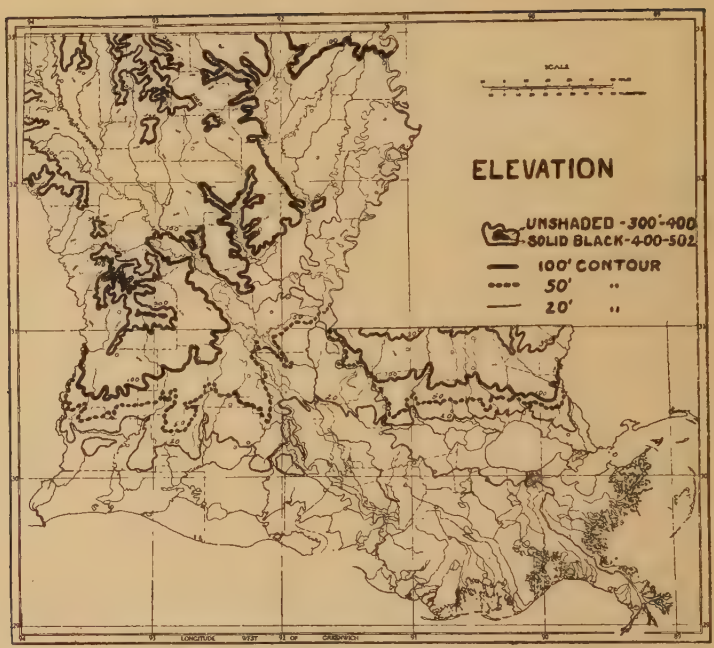

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Figure 3. Map showing elevation

Other evidences of an old sea-bottom plain are noticeable elsewhere in Louisiana. In northern Louisiana the old plain is indicated by terraces along the sides of and underlying present flood plains. To the south, the Opelousas Hills and low bluffs along the Mississippi near Baton Rouge suggest its former height and extent. In central Louisiana the plain is seen as the Avoyelles Hills and the terraces to the northwest, whose edge becomes prominent at Grimes Bluff on Red River.

A Ravine within the City Limits of Mansfield

The surface features. The surface slopes in general from the northwest to the southeast. Hills and rolling lands in the north give way farther south to near-level river bottoms and prairie lands, and they in turn to a stretch of low coastal marsh area. As calculated by Professor G D. Harris, Ph.B., of Cornell University, who made a geological survey of the state,[1] there are in Louisiana:

	Sq. Mi.
Above the 400-foot contour	375
Above the 300-foot contour	2,360
Above the 200-foot contour	9,240
Above the 100-foot contour	17,500
Above the 50-foot contour	27,250
Above the 0-foot contour	45,000

It is interesting to note that the 17,500 square miles above the 100-foot contour in Louisiana constitute a territory more than twice as large as the whole area of Massachusetts and more than three times the whole area of Connecticut (Appendix, Table 8).

The elevated lands. The elevated areas are found in three different sections. A low Ozark spur from Arkansas enters the northern portion of the state between the Ouachita and Red rivers; the Dolette Hills, from Texas, enter the western section; and the Tunica Hills, from Mississippi, enter the Florida parishes. The section occupied by the low Ozark spur contains considerable tracts above the 400-foot contour. Many localities are characterized by sharp deep valleys. The highest point in this area, so far measured, is 484 feet at Athens in

[1] From State Experiment Station, Geological Survey of Louisiana. Part VI.

Claiborne Parish. Erosion along the course of the Red and Ouachita rivers has tended to bring down the general elevation of this area. Here are found many large creeks with numerous branches fed by never-failing springs. These upland streams are usually clear They have comparatively swift currents and the valleys have steep slopes.

The Big Kisatchie in Winter

The western section, which has a range of elevation of more than three hundred feet, consists of two elongated ridges, one parallel with the Sabine River, the other parallel with the Red. On these ridges Keatchie and Mansfield are notable high points. Although certain localities have rugged hills, for instance, the Kisatchie Wold extending east and west across the southern part

of Natchitoches Parish, this upland is dominantly rolling with few slopes too steep to cultivate. Here, as in the section occupied by the Ozark spur, are many creeks fed by never-failing springs. Between the two ridges rise the upper tributaries of the Calcasieu River. The divide between the Calcasieu and the Red rivers is characteristically flat to undulating. In fact, the distinctions of the western uplands, those of the long-leaf pine flats, and those of the prairies and marshes to the south are so

A Typical Gravel-Surfaced Highway through the Pine Hills

blended that one passes from one area into another almost imperceptibly.

The third elevated area lies in the portion of the state east of the Mississippi. It slopes toward Lakes Pontchartrain, Maurepas, and Borgne with sharp distinctions between the upland and the alluvial land. As one travels eastward from the Mississippi River, a line of demarcation may be clearly seen about twelve miles below Baton Rouge. The main drainage divides of this Tunica region

are usually characterized by more or less rounded tops. Many short streams with clear water and gravel bottoms add charm to the scenery in this section. There are numerous lakes also, some of which are dry at certain seasons, but many remain filled the year round.

Long-leaf pine hills are found in the parishes of Catahoula, La Salle, Winn, Grant, Natchitoches, Rapides, Allen, Beauregard, Vernon, Calcasieu, St. Helena, Tangipahoa, Washington, St. Tammany, and Livingston.

A portion of the elevated area is known as bluff lands, beginning with the Bayou Macon Hills in West Carroll and extending southward through Richland, Franklin, Catahoula, Rapides, Avoyelles, East and West Feliciana, Baton Rouge, and St. Landry parishes (Appendix, Table 3). They also appear in the salt marshes as elevations about two hundred feet high in the so-called Five Islands of St. Mary and Iberia parishes. These islands are the only areas that furnish what might be called notable relief in the marsh region. As the largest island is only two miles across, their aggregate area is insignificant when compared with the vast extent of low land. These islands, which are really promontories and not islands in the accepted sense, are: Grand Côte, commonly known as Weeks Island; Petite Anse, better known as Avery Island; Côte Carline, known as Jefferson Island; Belle Isle; and Côte Blanche.

The lowlands. The lowlands, as shown on page 42, are the alluvial plains, the coastal prairies, and the marsh lands. The most extensive alluvial plains are the valley of the Mississippi, along the eastern border of Louisiana,

and the valley of the Red River, extending diagonally across the state from its northwest corner. Between the two valleys is a third or central plain of northern Louisiana, through which flow the Ouachita and Bœuf rivers. In all these flood plains, especially in the Mississippi bottoms east of the bluff lands, are many lakes and small waterways. A map of this region shows such a

A Southern Louisiana Scene

network or labyrinth of channels that tracing any particular stream from source to mouth is difficult. Many of these lakes and channels are dry in the summer and serve mainly as reservoirs during high water seasons. Some of them retain a considerable quantity of water at all times.

The coastal prairie region, a practically level area adjoining the marshes, includes Jefferson Davis and Acadia parishes and parts of Vermilion, Lafayette, Evangeline, St. Landry, Allen, Calcasieu, Iberia, and St. Martin parishes. On the south it passes almost imperceptibly into the marshes; on the north it passes in the same manner into the pine regions.

The marsh lands border the Gulf from the Pearl River, on the southeastern boundary of the state, to the Sabine, on the southwest, extending in places from thirty to fifty miles inland. They are a treeless area of wide expanse, varied only here and there by lakes and by shell or sand ridges. Upon them is found a close growth of rushes, bulrushes, grasses, sedges, reeds, and cat-tails. Harder bottomed flats lie along the western coast, while in the Mississippi region are "trembling prairies" with practically no bottom to the mud and ooze.

The coast line. The coast line from Sabine River to Vermilion Bay is very regular. Here the Gulf Current flows nearer the shore and gathers the sediment of the rivers of southwestern Louisiana and deposits it in a broken shore line east of the Atchafalaya River, where the Gulf Current swings farther from the shore.

From Vermilion Bay to Pearl River the coast line is very irregular, being indented by numerous bays and cut by thousands of lakes and bayous into a labyrinth of peninsulas and islands. Some of the numerous islands are mere sand bars; others are timbered.

The lakes and bays. The lakes of Louisiana may be classified into many types according to origin, but the four that follow are those most generally mentioned:

(1) coastal lakes, (2) cut-off lakes, (3) raft lakes, and (4) expansion lakes. Our coastal lakes and bays are of delta or barrier formation. Sediment carried by the Mississippi River into the Gulf is deposited on either side of the river channel as submerged embankments similar to those formed on the land surface during flood seasons. In course of time portions of the submerged deposit form a junction with the shore, thus separating a basin of water from the Gulf. As deposits of sediment are made farther into the Gulf new basins are inclosed, while the earlier ones are gradually filled with silt. Lake Pontchartrain is the largest lake in Louisiana which is formed in this way; Lake Borgne is in the process of separation. To the west of the mouth of the Mississippi, sediment from the Atchafalaya is forming sand-bar islands which will eventually inclose lakes or lagoons. The larger and deeper bays partly inclosed are the Barataria, Terrebonne, Atchafalaya or Berwick, and the Vermilion. While the usual depth of these bodies of water is from four to nine feet, that of Lake Pontchartrain is much deeper, twelve to sixteen feet. The southern shore of Lake Pontchartrain is low and, in some parts to the west, covered with cypress. The northern shore adjacent to the pine section known as the " ozone belt " is more elevated.

Lake Salvador, or " Ouacha," a fresh-water lake between Jefferson and Lafourche parishes, and its companion lakes, Cataouatchie and Des Allemands, are important reservoirs which drain the northern portion of the Lafourche basin. The shores of Lake Salvador are bordered with mounds of white shells and groves of oaks beyond

which may be seen stalwart cypress trees — all of which make Lake Salvador one of Louisiana's most beautiful lakes.

In southwestern Louisiana are four coastal lakes, Sabine, Calcasieu, Grand, and White, which should receive special mention. They are important not only as drainage reservoirs but as excellent hunting, fishing, and fur-trapping grounds. White Lake is so shallow as to be easily seined for fish.

Lakes of the second type, the cut-off, are found extensively along the Mississippi River. These, formed by the separation of meanders of the river, are horseshoe or oxbow in shape. Occupying the channel of the old loop or bend, they are relatively deep on one shore and correspondingly shallow on the other.

Raft lakes are numerous along the Red River, having been formed during the existence of the great raft (page 62). Driftwood became entangled among the standing timber, forming dams which impounded the spreading waters of the Red River.

Many rivers in Louisiana debouch, or expand, into the proportions of lakes. Such lakes are generally shallow and during dry seasons are greatly diminished in volume. Catahoula Lake in La Salle Parish and Grand Lake in the Atchafalaya basin are illustrations. Some expansion lakes are fresh water and some tidal; all are gradually filling up with deposits from the rivers. In addition to serving as natural reservoirs during high water, they furnish excellent hunting and fishing grounds.

Mounds. A peculiar feature of the surface of Louisiana

is the presence of sandy mounds. Widely distributed through the state are a vast number, low and rudely circular, about twenty to one hundred feet in diameter and from three to five feet high. They are well developed on the prairies and pine flats in southern Louisiana and occur irregularly on the terraces and hill lands of northern Louisiana. The material of which they are composed is quite distinct from the surrounding soil, a fact which causes much conjecture as to their origin.

Reclaimed land. The United States Department of Agriculture classifies all areas requiring either drainage or levee protection as wet land. Lands that have been either drained or protected by levees are reclaimed lands. A great part of Louisiana land is therefore spoken of as reclaimed land.

According to the Board of State Engineers there are 112 Drainage and Reclamation Districts in operation in Louisiana. Between April, 1924 and April, 1926 approximately $7,400,000 were spent upon levee work. As rapidly as funds permit, additional levee lines are built to protect more of our alluvial lands against overflow. The aggregate length of levee line protecting Louisiana before the 1927 flood was 1546.4 miles, of which 165.7 miles were in the state of Arkansas. Table 9 in the Appendix gives the lengths by districts.

At several points in south Louisiana, reclamation of strips of low plains lying between bayous has been undertaken on an extensive scale. Canals are dug around a square of ground containing several thousand acres; the excavated soil is thrown up as an inclosing levee; drainage canals are then cut crisscross within the inclosed

area and the water pumped over the levee. The United States census report places the average cost of reclaiming land in Plaquemines Parish at about twenty-five dollars an acre; in other parishes the cost is much less.

Soil

Classification. The lands of Louisiana are usually classified into six divisions: (1) alluvial lands; (2) uplands; (3) bluff lands; (4) pine flats; (5) prairies; and (6) swamps and coast marshes. Since the fertility of land depends upon the character and thickness of the soil, let us make a brief study of soil.

In general, taking the world as a whole, the soil cover varies in thickness from two or three inches to two or three feet. Throughout much the greater part of the United States where the soil is economically productive the thickness is from seven to eight inches. In areas of water-deposited soil the depth may be even hundreds of feet, as we noted in our study of the formation of southern Louisiana.

Soil consists of finely disintegrated rock mixed with humus or decayed animal and vegetable matter. The amount of humus may vary from muck, which is nearly all decayed vegetation, to a sand which contains very little humus. For most purposes soils are classified as coarse sand, fine sand, sandy loam, loam, silt, and clay. Loam is a mixture of about equal parts of sandy and clayey materials. A sandy loam is intermediate between a loam and a sand.

Clay is an important ingredient in all soils. In sandy

soils it tends to bind the sand grains together, thus giving the soil a good tilth. Some disadvantages of clay soils

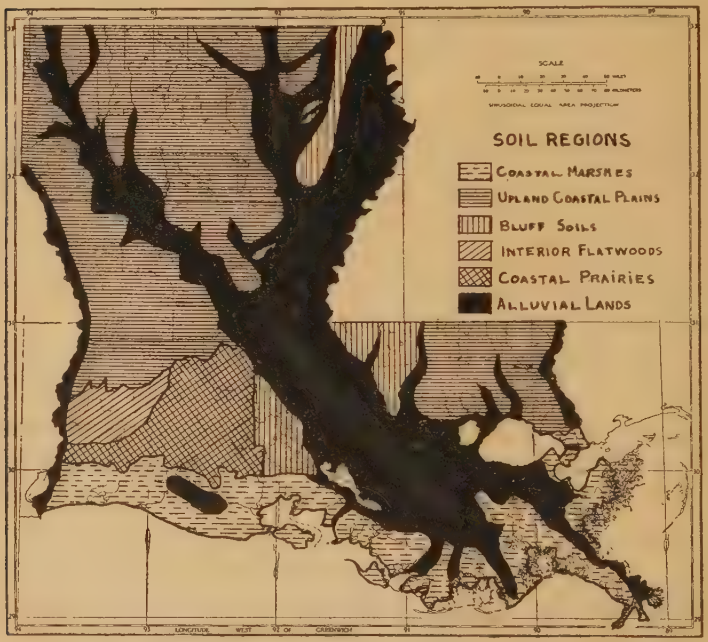

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Figure 4. Soil Regions

should be mentioned. They are usually colder than sandy soils and drainage is always a problem, because the fine grains do not allow a ready movement of water. Being heavy and tenacious, clay soils are difficult to cultivate and tend to crack and form clods when drying. On the other hand, clay soils contain a goodly amount of

plant food and, when properly handled, are retentive of moisture and may be made to crumble like sand instead of drying in clods. These qualities make properly handled clay soils perhaps the most productive in Louisiana.

No state in the Union has so large a percentage of alluvial soils as Louisiana and, in consequence, alluvial soils are considered typical of the state. They include, however, much less than half the state's area. The alluvial region proper comprises the very fertile agricultural lands in the " river parishes " on the Mississippi, Red, Black, Atchafalaya, and Ouachita rivers, and their tributaries, and some sections bordering the Gulf of Mexico. For many, many years a rank grass has been growing and falling into decay, producing humus which, mingled with alluvial deposits, makes the land exceptionally fertile. Alluvial soils vary in color from light gray and red to nearly black, and in texture from sand to clay. Near the banks of the streams the soil is sandy; that of the lower or " back lands " is stiff clay and silt; the intermediate lands have a mixed soil. The back lands are usually wooded swamps, a great part of which may be reclaimed by proper drainage.

The uplands, most of which lie in northern Louisiana, have three types of soil: the light sandy lands, easily exhausted by poor tillage; the larger area of grayish brown sandy texture; and the very productive red sandy clay lands. In these lands the change from surface soil to subsoil is abrupt and, when viewed in road cuts, the soil and the subsoil seem to be separated by a definite line.

The bluff or loess lands form a peculiar narrow strip

extending through the entire eastern part of the state from the Bayou Macon Hills to the islands of Attakapas. The soil is a silt loam, usually of yellowish color. Where there is sufficient mixture of organic matter, the color is dark brown or black. This soil is largely of wind-blown composition and is underlaid by materials of the upland coastal plain. It is a good general purpose soil. The soils of the terraces are similar to those of the bluffs, except that they have been reworked by water action.

The Mississippi lowlands divide the long-leaf pine region into two sections: the larger in the central and western parts of the state; the smaller in the Florida parishes. The soils, as a rule, are grayish in color and silty in texture, with a subsoil rather tight and putty-like, which causes drainage to be somewhat poor. These lands are good for trucking purposes, especially in places where the subsoil is a reddish clay.

In the western portion of the prairie region the soil is of a brown or black color, heavy in weight, and chiefly composed of clay and silt. In the eastern part of the region it is principally reddish clay. The subsoil is a compact clay, almost impervious to water. The flat surface and the character of the subsoil make the prairies very desirable for rice growing.

The soil of the coastal marsh lands, which are partly covered with water, consists largely of vegetable matter in all stages of decomposition, mixed with varying percentages of mineral matter. The inwash of sediment from higher regions is gradually changing this area into arable land, which can be reclaimed by local levees and

drainage machines. Since such a reclamation project calls for large investment, coöperation, and careful management, the marsh lands in their present condition are perhaps a greater asset to the state as the home of abundant wild life yielding an enormous income yearly and as a land of sport and recreation.

Soil conservation. The surface layer of soil is the most precious natural resource of Louisiana; and, of all responsibilities or obligations to future citizens of the state, that of maintaining the soil unimpaired in thickness and in richness is the most important. The causes of deterioration of the soil may be classed under two heads: mechanical erosion and loss of fertility. In mechanical erosion the soil itself is carried away by running water, the wind, or other agents. After the original protective covering formed by vegetation has been removed, rain water gathers into rills, the rills become rivulets, and gullies soon result. Unless these are prevented a field may be ruined in a very short while.

Soil erosion, which annually results in enormous losses to farmers, is most effectively prevented or controlled by terraces. These are simply ridges of earth thrown up across the hillside which hold the rain water that falls between the terraces until it evaporates, sinks into the soil, or finds its way slowly to an outlet at the end of the terrace. On hill land not so steep as to require terracing erosion is prevented by contour plowing. Lands that are allowed to lie fallow should always have a protective covering such as clover or soy beans.

The second cause of deterioration of the soil is the loss

of valuable elements of plant food. The chief elements upon which vegetation feeds are nitrogen, which is necessary for both vegetative growth and fruiting of the plants; phosphoric acid, which is needed for the fruiting and maturity; and potash, which enables plants to resist disease. When any part of a plant is removed from the soil in which it grows, plant-sustaining elements are carried with it, and the soil is impoverished. In an effort to conserve soil fertility, farmers practice rotation of crops, grow leguminous plants and turn them under the soil, and utilize all manure from their stables and barnyards.

Climate

Geographic conditions produce in Louisiana a climate practically ideal for all human activities. Life, the world over, is affected by three main climatic factors: (1) temperature, including the heating and cooling of the atmosphere; (2) moisture, including evaporation, clouds, and rainfall; and (3) air movements or winds. Some sections claim superiority in one of these factors; some in another; but in a combination of the three factors our state is unexcelled.

Temperature. Louisiana's temperature the year round favors man and growing vegetation. Seldom is work in the open prevented by either extreme heat or cold. Only occasionally do live stock need to seek shelter. From June to October cool breezes temper the climate; while on days in midwinter when the thermometer drops below freezing the atmosphere is almost invariably still and

clear. Sudden and decided changes of temperature are rare (Appendix, Tables 10, 11, and 12).

In order to understand this desirable climatic condition better, let us recall certain familiar truths. The sun's rays heat land four or five times as fast as they do water; water when once warm retains its heat longer than does land; there is more evaporation from a water surface than from a land surface, other conditions being the same, and evaporation cools the surface from which it takes place; a wet soil receiving the same amount of the sun's rays remains cooler than a dry soil. We should also remember that when bodies of different temperatures are near to one another there is a tendency for the temperature to become equally distributed. The great Gulf on the south and the vast network of streams and lakes throughout the state, therefore, play an important part in the control of climate. Winds blowing from the water keep the temperature of the adjacent lands relatively low during summer and relatively high during winter, resulting in comparatively uniform temperatures. The annual mean temperature in northern Louisiana is 65° F.; in southern Louisiana, 68° F.

Generally, the thermometer does not rise above 95° F. for more than one or two days at a time before the heat wave is broken by local thunder showers. Although only a small area may receive rainfall, strong breezes blow; the entire sky is covered with restful gray clouds; the mercury drops, and the air becomes refreshing.

The date of the first and last killing frost, because of the susceptibility of certain plants and fruits to damage by

cold, commands attention (Appendix, Table 14). Heavy planting is governed by the average date of the last killing frost in the spring. This date varies between January 25 for southern Louisiana and April 5 for northern. The average date of the first killing frost in the autumn likewise varies according to latitude between October 23 and December 29. Records kept during forty-eight years, at Shreveport, of the average dates of the first and last killing frosts give to north Louisiana a growing season of two hundred and forty-five days for tender plants, while many vegetable and field crops grow during the coldest winter days. The areas within which various plants thrive is affected not only by their susceptibility to damage by cold and by the length of the growing season but also by the amount of moisture.

Moisture. Precipitation takes equal rank with temperature as a factor in climate. Growing vegetation requires a large amount of moisture, but too much water is detrimental, as it either scalds or drowns the plants. In its agriculturally ideal amount and distribution of rainfall, Louisiana yields precedence to no other state. Table 15 in the Appendix shows that all sections of the state have ample and well-distributed rainfalls throughout the growing season.

The long continued droughts of some parts of the Union are practically unknown here. While some sections of Louisiana are subject to what we call droughts during the summer season, these periods are seldom long continued and are not so serious as in states where the groundwater level is farther beneath the surface. With

plenty of moisture deep in the soil, frequent shallow cultivation conserves moisture and carries crops through a dry season in splendid condition. A more bountiful harvest is insured, however, by irrigating during short dry periods.

Precipitation is almost entirely in the form of rain; hailstorms occur about twice a year but are not extensive nor destructive. Snow occurs about once a year in the northern section and about once every five years in the southern part of the state, but it soon disappears as the quantity is negligible.

Winds. The air movement is one of the most delightful features of Louisiana's climate. As before stated, cool breezes blow almost continuously during the summer months. Occasionally, during winter, north and northwest winds sweeping down from the great plains bring cold and severe frosts. East winds are raw and damp but the prevailing winds are from the Gulf, cool in summer and warm in winter.

Destructive high winds are exceptional, occurring on rare occasions when a West Indian hurricane, in its northward course, passes over the state. Hurricanes, most common in the late summer and the early autumn, usually follow a northwesterly course until the latitude of Florida is reached, where they commonly turn to the northward, and later to the northeastward, following the Atlantic coast. Occasionally, however, a hurricane turns westward and passes over the land, with rapidly diminished force. Table 13 in the Appendix shows the maximum wind velocity for different points in Louisiana.

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CHAPTER IV

INLAND WATERWAYS

The chief inland waterway of Louisiana is the great Mississippi which was once the commercial artery of the nation and upon which traffic is now increasing rapidly. There are many other navigable streams throughout the state and numerous lakes and canals in the southern section. These channels with navigable mileage totaling approximately forty-eight hundred miles (Appendix, Table 16) give Louisiana the best system of inland waterways in the nation. The distribution of both major streams and minor bodies of water favors commerce throughout all parts of the state. On the east the Mississippi River extends from the northern to the southern boundary; the Red River enters the northwestern corner, crosses the state, and joins the Mississippi south of the center; while the Atchafalaya River traverses the region south of the Red and west of the Mississippi. Other rivers not connected with these major streams flow through the western and the extreme eastern sections. All these are free from the ice and drought which obstruct navigation in many states and thus interfere with commerce.

The Mississippi River. The Mississippi is the great river not only of Louisiana but of America. Popularly called the "Father of Waters," it receives the flood waters from thirty-one states and drains 40 per cent of the area of the United States. Measured from the source of its

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Figure 5. The rivers of Louisiana listed by the Public Service Commission as being navigable

main tributary, the Missouri, it is by far the longest river in the world (4200 miles). It flows through and borders nearly six hundred miles of our state. Because of the vast extent of her alluvial lands, Louisiana has been called the "Gift of the Mississippi." Chapter III shows that this is an erroneous appellation.

The main channel of the Mississippi River is characterized by certain sections called pools, and interjacent

shallower sections called bars or crossings. There are 162 pools and 163 bars in 772 miles of the Mississippi River from Cairo to the mouth of the Red River. The pools are generally narrow and deep, the crossings wide and shallow. A pool may be less than a half mile wide at bank-full stage, while the crossings immediately above and below may be a mile and a half in width. The following table shows the average width and average depth at bank-full stage, over three stretches of the Mississippi River, as determined by the United States surveys:

Locality	Miles Below Cairo	Average Width in Feet	Average Depth in Feet
Cairo to Corona	0 to 205	6445	34.2
Natchez to Red River . . .	707 to 772	4532	52.4
New Orleans to Fort Jackson .	960 to 1043	2520	72.1

The Mississippi empties into the Gulf of Mexico through many mouths, but there are three main passes which begin to diverge at a point called the Head of the Passes, about thirteen to nineteen miles from the Gulf. Until 1877 the principal method relied upon for improving the mouth of the Mississippi was that of dredging. In 1874 Captain J. B. Eads contracted with the United States Government to deepen the South Pass to twenty-six feet, and began work in June, 1875. Young willow trees two and one-half inches in diameter, with all their branches on, were made into firm mattresses one hundred feet long, two to three feet thick, and from twenty to fifty feet wide. These mattresses were towed by a steam tugboat to a line of piles and covered with stone to make

them sink to the bottom, where they rapidly filled with sediment and soon became immovable. Each mattress joined its neighbor lengthwise until a continuous row was formed on the bottom of the Gulf along the line of guide piles. This constituted the foundation course.

A second course was placed on top of this foundation course, and then a third and a fourth course, each about five feet narrower than the course immediately beneath it.

As sediment, carried by the water, was deposited in these mattresses, they settled, and other courses had to be added during two or three seasons. Any mattresses not buried in sediment were heavily weighted with stone. After they had had time to settle and solidify, they were further consolidated by a capping of concrete blocks. The jetties have proved a perfect success in every way and provide a navigable channel at all seasons. Sediment brought down by the Mississippi is carried off by the Gulf currents and no shoaling at the outlet has occurred.

The levee system was inaugurated in 1717 when New Orleans was first laid out by De la Tour. The levees gradually extended upstream, each planter building the line along his river front. Later, the state government became interested. Enormous sums of money were spent on levees which were destroyed by the next extraordinarily high water. Savings of a lifetime were swept away by the rushing flood. Thousands of small farmers who rented land, but who, by thrift, had accumulated farming implements, teams, live stock, and similar property, suffered relatively greater loss than the larger landowners. With indomitable courage, energy, and determination, the brave landowners repeatedly struggled

anew against the great floods. Burdensome state taxes were insufficient to meet the expense of levee building. Frequent appeals were made to the national Congress but no assistance was given.

In the first quarter of the nineteenth century Congress began to direct serious attention to flood conditions in the Mississippi Valley. A corps of Army engineers investigated outlets, reservoirs, cut-offs, diversion of tributaries, levees, and reforestation as a means of control. Special committees considered the many theories advanced. Among the early commissions appointed by Congress to investigate the subject were: Bernard and Totten (1822), Charles Ellet, Jr. (1852), Humphreys and Abbott (1861), and the Warren Commission (1875).

The levee problem became more serious when Congress, in 1850, gave to the states of the Mississippi Valley all unsold swamp and overflow lands unfit for cultivation, the proceeds of the sales of which were to be devoted to the construction of levees and drains. The money so derived in the upper valley was spent in draining swamps into tributaries of the Mississippi, thus increasing flood heights in the lower valley. This compelled Louisiana to build higher and stronger levees. In 1877 our State Board of Engineers was created. Two years later the sentiment for national control of Mississippi floods had grown so strong that the Mississippi River Commission was created to make an extensive study of the problem. Since the organization of this commission, millions of dollars have been spent, and the river has been measured and observed as has been no other river in the world.

The question of how high the river would rise if all the water were kept within the main channel had to be determined. Observations and measurements to this end extended over a period of years. Although the volume of water was no greater when confined between embankments, the flood level rose much higher than when the waters spread over many square miles. Consequently, a number of people thought the bed of the river was filling up, but measurements at low-water stages showed the error of this belief.

To meet the increased height in the flood level, levees were raised and strengthened. Prior to the 1927 flood, levees between Cairo and a point below New Orleans were nearing completion to a standard grade established by the Mississippi River Commission. Their average height was as follows:

From Rock Island, Ill., to Cape Girardeau, Mo., 12 feet
From Cape Girardeau, Mo., to Helena, Ark., about 17 feet
From Helena, Ark., to Vicksburg, Miss., about 23 feet
From Vicksburg, Miss., to New Orleans, La., about 20 feet
Below New Orleans, La., 11 feet

Since the levees at several points gave way during the 1927 high water, the Mississippi River Commission has established a new standard grade which will withstand greater pressure. In addition to bringing levees up to standard, provision is being made for revetment work, or protection of caving banks. Meandering streams shift from side to side in their flood plains; hence it is useless to build levees without providing proper bank protection, as the river would eventually tear down the

levees themselves. Willow mattresses similar to those used in constructing the jetties are sunk below the low-water level, covering caving banks for two or three hundred feet and extending out toward the center of the stream. Held in place by rock ballast and piles, they immediately fill up with silt and are very efficient in preventing further caving.

Precaution is also being taken to supply a safety valve as a means of reducing extreme pressure in the event of an unprecedented high water. A spillway survey of the valley below the mouth of the Red River was authorized by an act of Congress, approved April 17, 1926. All available data on the problem of flood control in the Mississippi Valley are being studied. Numerous sites suggested for spillways and flood ways are being investigated. With the approval of the Mississippi River Commission our State Legislature (1924) authorized a spillway about fifty miles below New Orleans, where approximately eleven miles of levee on the east bank of the river were cut, thus providing the " Pointe-a-la-Hache Relief Outlet " through which excess water is diverted into a swamp area. As this outlet failed to assure safety, in 1927 a cut was made in the levee at Caernarvon to protect New Orleans, that city agreeing to reimburse the citizens of St. Bernard and Plaquemines parishes for their losses. This opening has been closed and construction begun on a spillway at Bonnet Carré. The necessity for spillways has been increased by the fact that many natural outlets have been closed. Of these, Bayous Plaquemine and Lafourche on the west are the most important. Bayou Manchac, an outlet on the east, was closed in 1828.

TYPE OF EQUIPMENT USED FOR WATERWAY COMMERCE BETWEEN NEW ORLEANS AND MISSISSIPPI VALLEY PORTS

In the last few years water transportation as a means of low-cost distribution of heavy and bulky freight has been advocated by some of the leading men of the nation. The Mississippi with its fleet of barges is again a prominent factor in transportation. To Cairo, St. Louis, and points beyond, to Mobile and Birmingham and other points, the barge service is fast gaining favor. Projects are in progress on the Ohio, Missouri, Illinois, Tennessee rivers, and other tributaries of the Mississippi rendering possible commercial navigation between New Orleans and the entire Mississippi Valley.

In addition to serving as an artery of trade, the Mississippi is the source of water supply for the city of New

Orleans and also for the irrigation of rice fields. From the standpoint of drainage the importance of the Mississippi is not commensurate with its size. Inclosed with levees on both sides, it receives in Louisiana the waters of only one large tributary, the Red River, and not all of that stream, as we shall see later.

The Red River. The second largest river of Louisiana is the Red, which rises in northwestern Texas and flows in a generally easterly and southeasterly direction, entering the Mississippi River at Red River Landing. The river is about 1275 miles long with a drainage basin of about 66,000 square miles.

When in 1803 the United States acquired the territory known as the Louisiana Purchase the limits of that tract were not clearly defined. Disputes with Spain arose, concerned chiefly with the Sabine, Red, and Arkansas rivers. The settlement of the dispute in 1821, which involved protracted and delicate negotiations between our United States Secretary of State and the Spanish Minister, named the southern bank of the Red as the boundary and specified that the river and all the islands are the property of the United States. Without pausing for further thought, this seems simple enough but, as late as January 15, 1923, the United States Supreme Court handed down a decision affecting the question. A number of troublesome factors have made the Red River boundary one of the most complicated cases ever referred to the Supreme Court.

The source of the Red River lies at an elevation of three or four thousand feet above sea level. The river receives the water of many tributaries, which, flowing over soft

" red beds," detach vast quantities of alluvial material and deliver it to the trough of the Red River, especially at times of cloud-bursts. To this quantity of red sediment the river owes its name. During long dry seasons, with the absence of such waste, the waters of the Red are relatively clear.

Leaving the elevated area in which it rises, the Red swings back and forth in its flood plain, shifting its bed by erosion on one side and deposition on the other. The process of growth of the inner bank is known as accretion. At a given bend a farm on one side of the river is increasing in acreage by accretion while a farm on the opposite side may be diminishing in acreage as a result of erosion. Not only does Red River take from one side and give to the other, but in times of high water it cuts across the necks of meander lobes and, after the water subsides, the river is flowing in a new course and in some cases its old course is left several miles to one side. The course of Cane River in Natchitoches Parish is an old channel of the Red River.

In its perpetual meandering the Red, as it swings from side to side in its heavily forested flood plain, undermines trees and fells them upon its banks, where they lie during low water to be gathered up as drift by the next rise. Logs thus acquired sometimes block the main channel and turn the current across the neck of a meander. At one time in the history of the Red River the mass of timber thus gathered was excessive and dammed up the river so effectually as to produce temporary lakes. As the water flowed off through the timbered bottom lands, logs were caught by the standing timber. A second dam was

thus formed which was separated from the initial one by open water. The driftwood dam in the main channel acquired enormous proportions as it gradually accumulated up the river. A great raft of alternating jams and open water reached a length of one hundred and forty miles. Within the limits of the dam, lakes were formed in a double fringe about the main river. After a period of perhaps a century or more, the lower section of the jam decayed but other logs were being added to the upper end at the rate of something less than a mile a year. Vegetation growing on the older portion of the rafts formed "floating forests." The navigable channel opened in 1873 through the raft above Shreveport was thirty-two miles long. The United States adopted measures to prevent the re-formation of rafts by the systematic clearing of the banks and the snagging and dredging of shoals, and for three quarters of a century packet boats gave regular service from Fulton, Arkansas, to New Orleans.

Any discussion of the Red River would be incomplete without mention of the rapids. A limestone ledge extending across the bed of the river about a mile above Alexandria produces a slight "fall." Though hardly noticeable at medium stages of water, during low-water stages the rapids, before the Government opened the channel, prevented the passage of boats. During the War Between the States, while Federal gunboats were up the river, the falling of the water made it necessary for a dam to be constructed between the rapids and Alexandria to raise the water so that the boats could safely pass. Traces of the dam and two Confederate forts near it are now points of interest on the Jefferson Highway.

The Atchafalaya River. South of the Red River and west of the Mississippi, the main stream is the Atchafalaya, which is an outlet of the Mississippi as well as of the Red. It begins at Old River on the northern boundary of Pointe Coupée Parish and flows south for about one hundred and seventy miles into Atchafalaya Bay.

After the Red effected a junction with the Mississippi, the Atchafalaya silted up and became choked for miles by immense rafts of timber. The removal of this in 1840 caused water again to flow into the Atchafalaya and the river rapidly enlarged.

We can see by Figure 6 that the Mississippi on the east and the Red-Atchafalaya on the west were connected by two channels which were the upper and the lower courses of the old bend of the Mississippi River. Notice the bend in the Mississippi River, the narrow neck of the meander lobe, and the Mississippi cut-off which formed Turnbull Island. The control of the water flow through the channels at the junction of the three rivers is one of the great problems facing our best engineers. The lower course of the old bend is now known as Old River.

During the low-water stages of the Mississippi the Red River flows through Old River into the Mississippi. When the water is high in the Mississippi, part of it flows through Old River into the Red and Atchafalaya. At one stage of water the Red sends a portion of its flow into the Atchafalaya and a portion into the Mississippi. During short intervals the water in Old River is at a standstill. Just before the water in Old River ceases to flow, the channel rapidly fills with mud deposits, making it difficult for boats to pass.

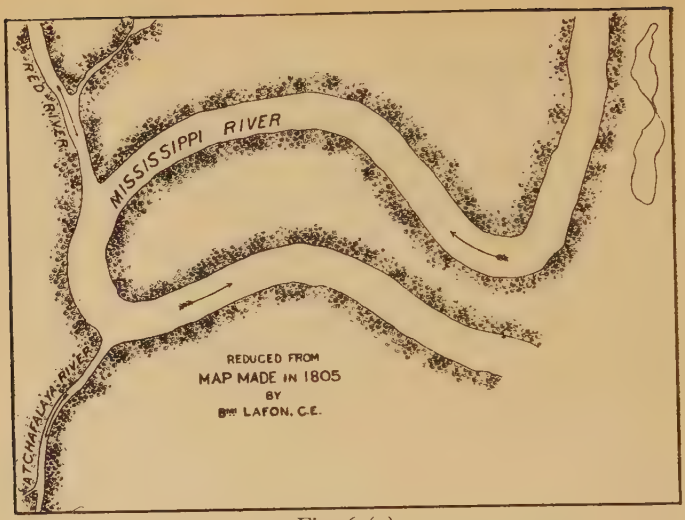

RED RIVER
MISSISSIPPI RIVER
ATCHAFALAYA RIVER
REDUCED FROM
MAP MADE IN 1805
BY
Bte LAFON, C.E.

Fig. 6 (*a*)

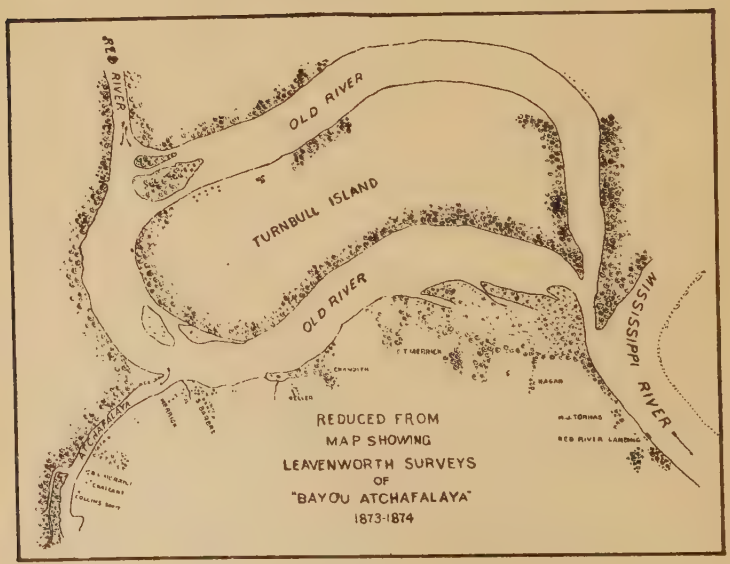

RED RIVER
OLD RIVER
TURNBULL ISLAND
OLD RIVER
MISSISSIPPI RIVER
REDUCED FROM
MAP SHOWING
LEAVENWORTH SURVEYS
OF
"BAYOU ATCHAFALAYA"
1873-1874

Fig. 6 (*b*)

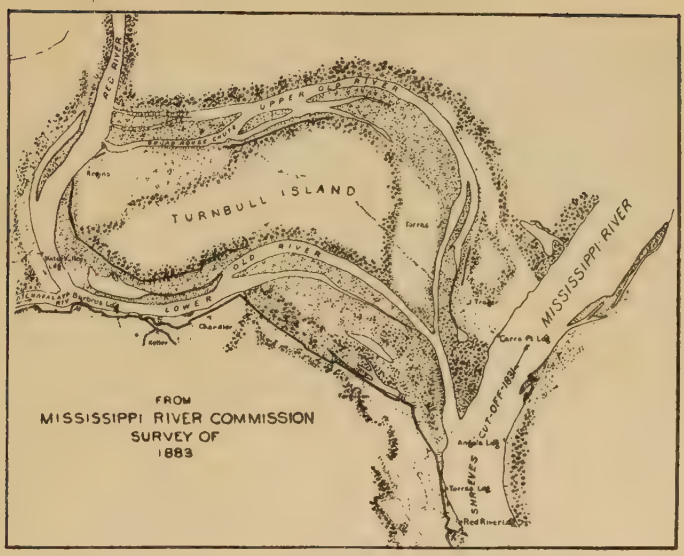


Fig. 6 (*c*)

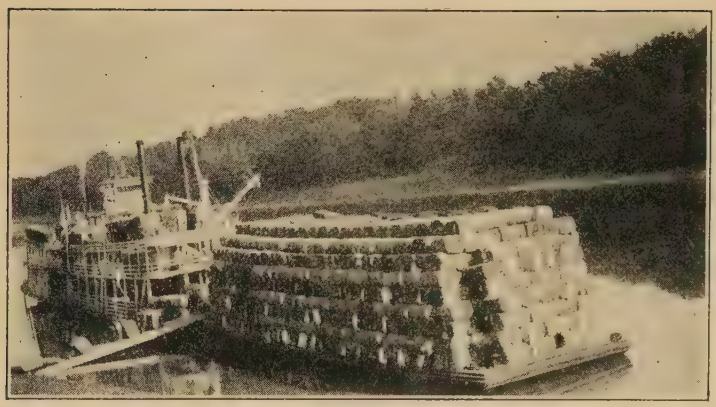
Figure 6. Maps showing changes at mouth of Red River and vicinity. Note on (*a*) the bend in the Mississippi River; (*b*) the cut-off forming Turnbull Island and the width of Old River; (*c*) the deposits in Old River.

At one time many years ago it was feared that the water from the Red River with the occasional flow of water from the Mississippi would so deepen the Atchafalaya as to encourage the Mississippi to abandon its own channel in favor of the shorter route via the Atchafalaya to the Gulf. To prevent this possibility two submerged sills were built across the Atchafalaya near Simmsport, about four miles from the Old River. These sills are of mattress construction similar to that of the jetties at the mouth

of the Mississippi. The sills, by keeping the waters of the Mississippi from cutting any deeper into the bed of the Atchafalaya, limit the amount of water that can enter the Atchafalaya. Further measures for controlling and regulating this water flow are under consideration.

For about fifty-one miles, levees averaging fifteen feet in height confine the waters of the Atchafalaya to a channel approximately fifty-five feet deep. From the end of the levee southward the water flows through many channels and over a wide expanse of lakes, bayous, and swamps before reaching the Gulf. Among the more important outlets are Grand River and Grand Lake.

The Black River. The largest tributary of the Red River is the Black River, which is formed by the junction of the Ouachita, Tensas, and Little rivers near Trinity. It is about fifty-seven miles long and enters the Red on the north side a short distance above the mouth of the latter. The Ouachita, which rises in Arkansas, is one of the most important rivers of north Louisiana. In its upper portion, gigantic dams have been constructed for the purpose of generating electricity, while locks and dams make through traffic practicable between New Orleans and Camden, Arkansas. The freight carried consists of timber, building material, farm products, carbon black, and general merchandise. The city of Monroe has constructed a warehouse, open to the public, for receiving steamboat freight. The Tensas, which has its source in Lake Providence, is about two hundred and fifty miles long and receives the waters of Bayou Macon, which rises in Arkansas. The Little River flows along the western boundary and across the southern part



Barge Load of Cotton, 1733 Bales, on Ouachita River, October, 1928. Value $155,000

of La Salle Parish. It debouches into Catahoula Lake. During a dry summer season a great part of the lake's area is drained and covered with luxuriant vegetation.

The drainage basin of the Black River, being one of the most heavily forested areas in Louisiana, is a popular retreat for wild game. Deer, bears, and foxes abound, as well as raccoons, opossums, and minks. Wild turkeys, bobwhites, and doves are also plentiful.

The Calcasieu River. A major part of southwestern Louisiana is drained by the Calcasieu and its numerous tributaries. The Calcasieu is a tidal stream to Lake Charles and semi-tidal between Lake Charles and Phillips Bluff near the Allen Parish line. It is navigable for small boats for about one hundred and thirty miles. Recently, extensive wharves have been built and a deep-sea channel constructed to bring ocean-going vessels to Lake Charles. Entering Sabine Pass, ships traverse the channel through

Sabine Lake, proceed up the Sabine River to the Intracoastal Canal, thence through the canal and up the Calcasieu to Lake Charles.

In 1928 the total exports and imports at Lake Charles amounted to 87,308 short tons, with an approximate valuation of $6,250,000. The coastwise tonnage for the same year amounted to 400,000 short tons valued at approximately $6,500,000. Among the leading commodities of the coastwise shipments were rice and rice by-products, naval stores, oil, lumber, salt, fertilizer, wrapping paper, canned goods, and hardware. The principal exports consisted of rice and rice by-products, lumber, naval stores, cotton, cottonseed cake and meal, steel rails and scrap iron, while among the chief imports were binder twine, muriate of potash, nitrate of soda, nitrate of potash, asbestos shingles, cement, and newsprint paper.

The Sabine River. The Sabine on the western boundary of Louisiana is, for the most part, a somewhat swift stream, flowing in a narrow sinuous channel with one sharp bend following another in quick succession, a sand bar on one side and a rapidly caving bank on the other. Shoals and rapids extend along its course for sixty miles, associated usually with low banks, not with the higher bluffs. The lower portion of the Sabine forms a link in the Intracoastal Canal.

Minor Streams

In addition to the above-mentioned major streams, there are numerous minor streams throughout the state, many of which are channels of navigation. In northern Louisiana three are worthy of special mention; two of

these, Bayou Bartholomew and Bœuf River, rise in Arkansas, flow toward the southwest, and enter the Ouachita from the east. At the present time (1929) the Bœuf River is receiving national attention since it has been suggested as one of the proposed flood ways in connection with the Mississippi flood-control plan. A third minor stream in the northern part of the state is Bayou D'Arbonne. Formed by the junction of three streams near Farmerville, it flows toward the southeast and becomes a western tributary of the Ouachita River.

Among the streams in the southern section west of the Atchafalaya is Bayou Teche, which has its source in Bayou Courtableau, in St. Landry Parish, follows the narrow terrace of an old flood plain of the Mississippi, and joins the lower Atchafalaya River about ten and a half miles above Morgan City. Below Keystone Lock, which is a few miles above New Iberia, the stream is tidal. Water connection for the produce of the fertile lands bordering the Teche will be made with the Intracoastal Canal by way of Hanson Canal, near Franklin, and Bayou Portage. The Teche country, rich not only in material resources but in history and romance also, is widely known as the Land of Evangeline.

Farther west is the Vermilion River or Bayou which, like the Teche, should be mentioned for its beautiful scenery as well as for its commerce. It is formed by the junction of Bayou Fusilier and Bayou Bourbeau, not far from Arnaudville, and is the first stream west of the Atchafalaya not flowing into that stream. Boats are operated between Abbeville and the lower coast; numerous smaller craft are used on the river during the fishing

Loading Irish Potatoes along Bayou Lafourche for Shipment to New Orleans

season. Cargoes consist principally of cane, sugar, rice, oil, fuel, and lumber.

The Mermentau River is formed by the junction of Bayous Nezpique and Des Cannes. The latter has a navigable tributary, Bayou Plaquemine Brûle. After receiving the waters of Bayou Queue de Tortue, a tidal stream separating Acadia and Vermilion parishes, the Mermentau flows through Lake Arthur and Grand Lake, thence into the Gulf. Considerable traffic exists on the main stream and its several navigable tributaries, since they are used extensively for delivering fuel oil to the various rice irrigation pumping plants. Rice is the largest single article of commerce.

Among the streams in the southern section and east of the Atchafalaya is Bayou Lafourche, which formerly was an outlet of the Mississippi. From Donaldsonville it flows toward the southeast for one hundred and seven

miles and empties into the Gulf of Mexico about fifty miles west of the mouth of the Mississippi. It is used for shipping potatoes and other truck, and cane, sugar, molasses, logs, and oil.

Bayou Plaquemine also was formerly an outlet of the Mississippi with which it is now connected by Plaquemine Lock.

East of the Mississippi, in the Florida parishes, there are many short streams, among the larger and better known of which may be mentioned the Tangipahoa, the Pearl, Bogue Chitto, Tchefuncte, Natalbany, Amite, Comite, Bayou Sara, Thompson's Creek, Chappepeela Creek, Tickfaw River, and Bogue Falia. Many of the waterways in this part of Louisiana are being improved by the United States Government, and commerce is thus facilitated. Freight consists principally of sand, shells, lumber, logs, wood, bricks, and miscellaneous merchandise.

Bays and Lakes

Many bays and lakes are integral parts of Louisiana's waterway system. Of the larger bays may be mentioned Vermilion Bay and the Atchafalaya Bay. In the latter the Atchafalaya River has scoured for four miles a channel 20 feet deep. Starting at this natural channel there was dredged a channel 20 feet deep and 200 feet wide extending a distance of $15\frac{3}{4}$ miles to deep water in the Gulf of Mexico. A deep-water outlet was thus provided for commerce originating at or near Morgan City.

Lake Pontchartrain, chief of the lakes, is 40 miles long and 25 miles wide with a central depth of 16 feet. Connected with the Mississippi by the Inner Harbor Naviga-

tion Canal and with Lake Borgne and the Mississippi Sound by the Rigolets, it is used extensively in the coastal trade of New Orleans with Gulfport, Biloxi, Mobile, and other points. Lake Pontchartrain, Lake Salvador, and Grand Lake are all important links in the Intracoastal Canal.

Canals

Intracoastal Canal. Even more important commercially than some of the state's natural waterways mentioned above is the Intracoastal Canal. Numerous rivers in southern Louisiana, parallel to each other but separated by intervening swamps, flow across the coastal marsh into the shallow Gulf. Each river has served as a highway for the long north-south isolated population group along its banks, and each group early developed at least one river town. Some of these old towns are Thibodaux, Houma, Berwick, New Iberia, Abbeville, and Lake Charles. The Intracoastal Canal cuts directly across this series of parallel rivers and connects them into a systematic whole, giving the much-needed cross communication by water to more than a score of southwestern towns of the state. The route of the canal through Louisiana is shown on the map in the front of the book. Eastward the water route will extend to Tampa, Florida, and westward to the Rio Grande, furnishing a protected waterway for coastwise trade along the Gulf coast.

The first survey for the Intracoastal Canal was made by United States Army Engineers and reported in detail in 1875 as a survey for connecting inland waters along the margin of the Gulf of Mexico from Donaldsonville,

Louisiana, to the Rio Grande River in Texas. It is only of recent years, however, that the canal has received much favorable attention. It is now viewed as a potentially important trunk line in water transportation between points east of the Mississippi and points in southwestern Louisiana and Texas, and also as a route which makes many of our southern towns accessible, through the Gulf, to foreign trade. From the principal manufacturing cities of the North and East a large volume of bulky products, including particularly agricultural implements and other iron and steel products, can easily reach many Louisiana points by a through water route, to which transshipment was formerly necessary.

In digging the canal, natural waterways are utilized wherever practicable. In the absence of desirable natural routes, canals are dredged. In a number of instances, canals which were owned and operated by private interests have been purchased by the Federal government, widened, deepened, and linked up with others into a continuous route. Many locks have been constructed.

Between New Orleans and Morgan City two routes are provided. One follows the old Harvey Canal and other canals and streams through Lake Salvador, a distance of one hundred and seven miles. The other route extends up the Mississippi River to Plaquemine, through Plaquemine Bayou and the Grand River system to Morgan City, a distance of one hundred and seventy-six miles.

Inner Harbor Navigation Canal. Though less than six miles long and only recently constructed (1923), this canal connecting the Mississippi at New Orleans with

Inner Harbor Navigation Canal

Lake Pontchartrain serves a fourfold purpose: (1) It is an important link in the Intracoastal Canal. (2) It provides the port of New Orleans nearly twelve miles of additional water front, free from the inconveniences of tidal fluctuations and the river's more than twenty-foot range between high and low water marks. (3) It opens up a large hitherto inaccessible tract of land back of the city which is suitable for factory sites. (4) It provides a shortened water route from New Orleans to the coal fields of Alabama, giving the city a great advantage industrially.

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CHAPTER V

TRANSPORTATION AND COMMUNICATION

Prior to 1880 river transportation predominated in Louisiana; palatial steamboats plied the Mississippi, Red, Ouachita, and other rivers; and smaller packet lines served numerous towns along the many smaller rivers and bayous of the state. Vast cargoes of cotton, sugar, molasses, and other agricultural products were carried from rural Louisiana to New Orleans; and from the cities and towns along the rivers and bayous of the state, the needs of other communities were supplied. The annual steamboat trip to New Orleans of merchants, social groups, and well-to-do families was the event of the year to rural Louisiana. Today, the railroads are the chief means of transportation within the state, but the automobile, bus, and truck are also important.

Railroads. Louisiana has twenty-eight hundred miles of railways, connecting not only the entire Mississippi basin with the state, but linking the Crescent City with the great cities of the East, West, and North. Safety, speed, and comfort are characteristic qualities of the great lines traversing the state. Much credit is due to these railroads for the material development of Louisiana and her natural resources. The progressive management of the roads, the efficient maintenance of the rolling stock and equipment, the splendid passenger service offered, the excellent facilities for handling freight on the main

and branch lines, the intelligent advertising methods pursued, all have made these roads of inestimable value to the state in general and to the large centers of population in particular. Several of the greatest systems of the country have terminals at New Orleans. The railroads have done a great deal to make the Crescent City a vastly greater port than it could ever have become had it continued to depend chiefly upon the Mississippi River for its inland transportation.

The marked growth and development of railroads in Louisiana during the last five or six decades and their continued improvement and activity to the present time are due to several causes. The large forests of virgin pine, cypress, and hardwoods of the state, which remained almost untouched prior to 1880, made possible the establishment of an enormous lumbering industry, requiring extensive railroad facilities for the transportation of its output. The utilization of the fertile alluvial lands of the state and the large increase in acreage of such crops as rice and strawberries have likewise contributed to the expansion and development of railroads in Louisiana. The growth of manufacturing industries throughout the state and the rapid commercial and industrial development of New Orleans, partly due to the construction of the jetties and of the Panama Canal, have also contributed to and profited by the expansion of the system of railways. Other factors of importance in this expansion have been the low cost of railroad construction in Louisiana and the ten-year exemption from taxation of all railroads built in the state during the four-year period between 1905 and 1909.

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Figure 7. The leading railroads of Louisiana

There are sixty intrastate and interstate railroads operating in Louisiana, of which the following are the most important: The Texas and Pacific, the Missouri-Pacific, the Southern Pacific, the Illinois Central, the Southern Railway, the Louisville and Nashville, the Louisiana Railway and Navigation Company, the Kansas City Southern, the New Orleans, Texas and Mexico (Gulf Coast lines), the Rock Island, the Yazoo and Mississippi

Valley, the Vicksburg, Shreveport and Pacific, the Louisiana and Arkansas, and the St. Louis and Southwestern (Cottonbelt).

The Texas and Pacific Railway extends diagonally across the state from New Orleans through Alexandria to Shreveport and westward into Texas. It has a longer main line in Louisiana than any other railroad. Its branch lines reach Baton Rouge, Ferriday, Opelousas, Eunice, Marksville, Mansfield, and other important towns. The traffic of this road is exceedingly diversified, including cotton, grain from the West, lumber, sugar and sugar cane, tropical fruits, live stock, petroleum and oil products, stone, gravel, and other building materials, motor vehicles, general farm products, and merchandise.

The Missouri Pacific traverses the state from northeast to southwest with service from Alexandria to New Orleans over the Texas and Pacific tracks, and has the greatest mileage of any railroad in Louisiana. It has established fast through-freight and passenger service from New Orleans and several cities of the state to Kansas City, St. Louis, Chicago, and other mid-western cities.

The through line of the Southern Pacific, connecting New Orleans with San Francisco and other Pacific coast cities, traverses the rich rice, sugar, and lumber sections of south Louisiana. This line and its branches are aiding the rapid development of Lake Charles, Alexandria, Shreveport, Lafayette, Crowley, New Iberia, Franklin, Morgan City, St. Martinville, Houma, and Thibodaux. Lumber and oil form the bulk of its freight, though cotton and cattle come from Texas, and vast amounts of fruit

from the famous California fruit districts are carried eastward by this road. The Morgan Steamship Line, an auxiliary of the Southern Pacific, gives service through New Orleans to New York and Havana.

The Illinois Central is a most serviceable road, both to the city of New Orleans and to the state of Louisiana. It connects New Orleans with Chicago, St. Louis, and other cities of the middle West. Its freight sheds, yards, and Stuyvesant docks extend three miles along the city's river front. The railroad handles grain, cotton, fruit, garden truck, lumber, and other freight in enormous quantities. The Illinois Central is doing a great deal for the development of the famous strawberry region in the Florida parishes of Louisiana.

The Louisville and Nashville Railroad handles a miscellaneous traffic, including coal and iron from Alabama, fruits from Florida, and fish from the Gulf towns. Cotton and lumber are its principal export commodities. This is also the Louisiana line to the numerous beautiful summer resorts that form a chain on the coast of the Gulf of Mexico in southern Mississippi and Alabama.

The Louisiana and Arkansas extends in a southeasterly direction from Hope, Arkansas, to Alexandria, with a branch line to Ferriday, near Natchez. It is a strong competitor of the Vicksburg, Shreveport and Pacific (a subsidiary of the Illinois Central) which traverses the northern part of the state. The Chicago, Rock Island and Pacific, passing southward through the great oil fields of south central Arkansas, bisects the state of Louisiana, and has its terminus at Eunice, where connections are made with the Southern Pacific and Gulf Coast

lines. A great amount of crude oil is shipped to the refinery at Baton Rouge by this route.

The Kansas City Southern serves the western tier of parishes, extending from the Arkansas line through Shreveport to Lake Charles near the Gulf. This road, on account of its connections at Kansas City, brings for export large quantities of wheat and other grain. Lumber, petroleum and petroleum products, and general merchandise are other important commodities transported by this road.

The line of the Louisiana Railway and Navigation Company extends from New Orleans on the east side of the Mississippi River to Angola, and thence through Mansura, Alexandria, and Coushatta to Shreveport and towns in northeast Texas. The Interstate Commerce Commission has recently approved the purchase of this road by the Louisiana and Arkansas Railway.

The Public Belt Railroad in New Orleans represents an investment of $3,500,000. It supplies switching service to the wharves, railroads, and shippers all along the river docks and along the Industrial Canal. It owns 82 miles of trackage and 16 locomotives; and in 1925 it handled more than 300,000 cars of freight. It is one of the most potent factors contributing to the efficiency of the port of New Orleans.

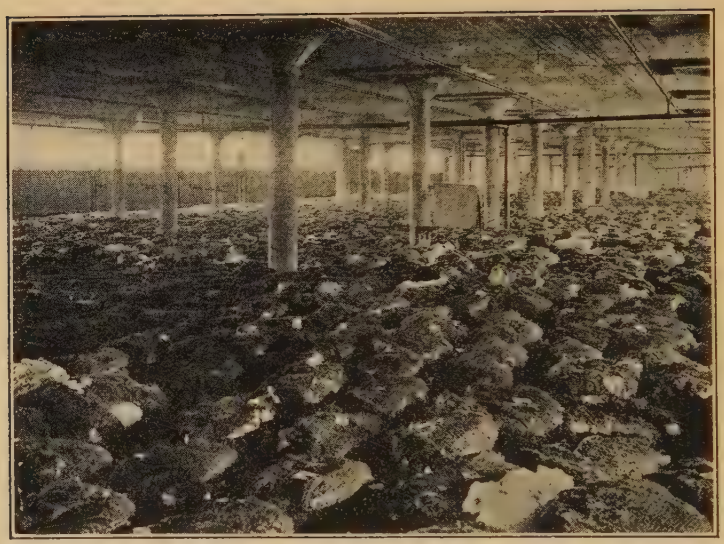
Telephone and telegraph lines. That an exceedingly great amount of business is transacted by means of telephone and telegraph communication is shown by the value of the investment in Louisiana. The Western Union Telegraph Company has a total state value of $2,788,000, while that of the Southern Bell Telephone

and Telegraph Company is $14,646,000. Besides these, there are twenty-three local telephone companies in the state, with a valuation of more than $300,000. Service is rendered also by the Tropical Radio and Telegraph Company, the Postal Telegraph Company, and the Mexican Telegraph Company (All America Cables, Inc.).

The port of New Orleans. Lying in an area where there are enormous supplies of lumber, cotton, oil, sulphur, salt, rice, and sugar — all of which are collected here for export — and receiving for shipment products from practically every state in the Mississippi Valley, New Orleans has developed not only as a railroad center, but also as a great world port. Located at a point near the mouth of the Mississippi River and serving as the gateway of the most highly developed of the large valleys of the earth, New Orleans is greater commercially than she is industrially, and ranks not only as a seaport, but as a great river port. The improvements that have recently been made in the Mississippi River, the Panama Canal, and the Inner Harbor Navigation Canal all favor the continued rapid growth of the city.

The foreign tonnage through New Orleans in the year 1925 amounted to nearly one tenth of all the foreign tonnage of the United States. It exceeded the combined tonnage of San Francisco, Portland, and Seattle on the west coast; and likewise the united tonnage of Galveston, Mobile, Port Arthur, and Houston on the Gulf.

New Orleans bears the distinction of having made a greater advance in 1925, both in the volume of its foreign trade and in its rate of growth, than any other port in



Cotton Warehouse, New Orleans

the United States. Owing to its splendid situation with regard to the Panama Canal, the Crescent City also enjoys an increasingly large volume of trade with the Pacific ports of South America and the Far East. More than six hundred thousand long tons of cargo passed through the Panama Canal in 1925 either to or from New Orleans. The commerce between New Orleans and the coast towns and cities of the Pacific and the Gulf has likewise grown rapidly.

On the wharves at New Orleans, in addition to the products native to the United States, may be seen sisal from Yucatan; dyewoods, coffee, chicle, crude rubber, hides, and minerals from Mexico; mahogany from South

America; bananas, pineapples, and other tropical fruits and nuts from Central America and the islands of the West Indies; burlap brought in British ships from India; cheese, olive oil, lemons, garlic, fuller's earth, fine china, porcelains, laces, toilet articles, crude chemicals, plate glass, and baskets from the four quarters of the globe — all to be redistributed to the state of Louisiana and throughout the United States.

Some idea of the facilities and improvements of the port of New Orleans may be obtained from the following data on the valuation of properties connected therewith: United States Army and Quartermaster Depot and Naval Station, $20,000,000; Board of Port Commissioners (for docks, wharves, cotton warehouse, grain elevator, commodity warehouse, coal tipples, and other equipment, and the Industrial Canal), $48,000,000; Orleans Levee Board, $13,000,000; Public Belt Railroad, $3,000,000; Railroad River Terminals, $16,000,000; Sewerage, Water, and Drainage Board, $41,000,000.

The harbor at New Orleans is practically three quarters of a mile wide and is one of the safest in the world. From the city to the passes the river is from 60 to 90 feet deep, while in the channel of South Pass a depth of 30 feet at mean tide is maintained. The Southwest Pass has a channel 35 feet deep.

The great advantage to be secured by coördinated facilities operated under a plan guaranteeing equal service and equal rates to all is well illustrated in the port of New Orleans, where the public belt and wharf facilities operate in the public behalf without favor to any shipper or to any rail or water line.

Grain Elevator, New Orleans

Steamship lines, steamboats, and barges. More than 90 steamship lines enter the port of New Orleans, and 6280 vessels with a net ship tonnage of over 16,000,000 tons entered and cleared the port during the year 1924. Among the great lines providing service between New Orleans and foreign ports may be listed here the Leyland Line, the Harrison Line, the Elder Dempster Line, the Hamburg-American Line, the United Steamship Line, the Trans-Atlantic Line, the Oriental Line, the French Line, the Three Star Line, the North German Lloyd, the Norway-Mexico Gulf Line, the New Orleans Havana Steamship Lines, the Munson Steamship Line, United Fruit Company, the Cuyamel Line, the Osaka Shoson

Kaisha, the Pan-American Petroleum and Transport Company and the Shore and Creole Lines. In addition to these are the coastwise lines: the Gulf and Southern Company, the Southern Steamship Company, the Intercoastal Dollar Line, the Luckenbach Line, and the Morgan Line.

Still highly serviceable to New Orleans and to Louisiana are the river steamers and packets, though their glamour of the past has vanished. Lines of steamboats carry on a valuable trade on the Ouachita and Mississippi rivers through the Monroe, Louisiana-Arkansas Lines. Steamboats from New Orleans go to Barataria, Grand Isle, Natchez, Vicksburg, Baton Rouge, Lockport, Houma, Morgan City, New Iberia, Burrwood, Port Eads, and Bayous Lafourche, La Rose, and Golden Meadow.

A number of barge lines carry freight. Notable among these is the Mississippi-Warrior Service connecting New Orleans with Natchez, Vicksburg, Memphis, Cairo, and St. Louis on the Mississippi River and with Mobile, Birmingham, and points beyond. The War Department, under the Transportation Act of 1920, operates this service between the Mississippi River points named above and points on the Warrior River and beyond, by way of the Mississippi River, Lake Borgne Canal, Lake Borgne, the Mississippi Sound, and the Warrior River. The states of Louisiana, Alabama, Mississippi, Tennessee, Missouri, Arkansas, Illinois, Indiana, Iowa, Kansas, Kentucky, Texas, Minnesota, Nebraska, North and South Dakota, Ohio, and Wisconsin are directly benefited by this service. The Mississippi-Warrior barge line handled over 910,000 tons of cargo during the year 1925; and its

equipment represents an investment of several million dollars by the national government.

Barges also operate from New Orleans to Alexandria, Monroe, and other Louisiana points on the Mississippi, Red, Ouachita, and Atchafalaya rivers.

Canals, which played so important a rôle in transportation during the earlier history of the United States, have fallen into disuse. Scarcely one half of the 4200 miles of canals built in this country are still in use. Louisiana is one of the four states in which the deep, modern canal continues to serve commerce and navigation. Lake Pontchartrain, lying to the north of New Orleans, serves the city by two canals, which, in 1924, handled cargoes valued at more than $4,000,000. There are other canals in the state linking lakes and other waterways, including particularly the Intracoastal Canal.

The highways. The Louisiana Constitution of 1921 established the plan by which the state's great system of highways has been built. This "pay-as-you-go" plan provided for surfaced highways connecting all parish seats, and is now virtually complete. The cost has been defrayed by the national government, the state, and the parishes. A constitutional amendment adopted in 1928 makes provision for bond issues which will aggregate from $30,000,000 to $40,000,000 for the purpose of hard-surfacing the main trunk lines or interstate highways in Louisiana.

Chief among the great highways of Louisiana are the following: (1) The Jefferson Highway, which begins at New Orleans, runs through Baton Rouge, Alexandria, Natchitoches, Mansfield, and Shreveport, and thence

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Figure 8. Principal highways, state and national

through Texas, Oklahoma, Missouri, Iowa, and Minnesota to Winnipeg, Manitoba. Of all the states traversed by this road, Louisiana has the honor of first having gravel-surfaced its entire link of 415 miles. (2) The Old Spanish Trail, which enters Louisiana from the east near Slidell, and connects New Orleans with Franklin, New Iberia, Lafayette, Crowley, Jennings, Lake Charles, and points to the west, with a total length in Louisiana of 357 miles. (3) The Dixie Overland, which connects Vicksburg, Mon-

roe, and Shreveport with intervening towns along the Vicksburg, Shreveport and Pacific Railway. Its length is 199 miles.

Other important interstate highways traversing Louisiana are the Louisiana Purchase Highway, which runs on the west side of the Mississippi and Red rivers from New Orleans to Shreveport and the northwest; the Pershing Highway, which crosses the state north to south through Alexandria; the Pelican Highway and the New Orleans-Hammond Highway. Maps issued by the Louisiana Highway Commission show all surfaced highways in the state.

All state highways and parish roads are maintained in good condition for all-year service. This is accomplished despite the fact that several highways carry at certain points a daily traffic of fifty-five hundred vehicles. Such heavy traffic wears away the roads rapidly and it was found necessary to surface them with concrete or some other type of permanent paving material in order to reduce the cost of upkeep and eliminate the dust nuisance.

The cost of highway projects in Louisiana completed between 1924 and 1928 amounted to over $20,000,000; and a still larger amount is available for other projects to be completed during the four-year period between 1928 and 1932. When completed the system will include about nine thousand miles of highways.

Trucks and buses. The Louisiana highways are used to carry little through freight, but they bear thousands of tons of traffic for short distances. For example, the Orleans-St. Bernard road carries in one day an average of 50 foreign auto trucks; 567 three- to five-ton trucks,

HARD-SURFACED HIGHWAY NEAR SCOTLAND, ABOUT SIX MILES NORTH OF BATON ROUGE

loaded; 670 three- to five-ton trucks, empty; 720 trucks of less than three tons, loaded; 634 of less than three tons, empty. The Vicksburg-Monroe Highway carries an average daily traffic of 211 foreign auto trucks; 118 three- to five-ton trucks, loaded; 103 three- to five-ton trucks, empty; 116 trucks of less than three tons, loaded; and 29 of less than three tons, empty. When it is recalled that there are nearly 300 such local roads, it is not difficult to conceive the future possibilities of the highways for transportation of long-distance freight by means of auto trucks.

Thousands of strangers who come to Louisiana are interested in the romance of the Teche country, the charm of the bayous, the mystery of the moss-laden oaks of the swamp lands and of the Evangeline district, the glimpses of the placid waters of the Gulf lands, the great game preserves of the state, the famous salt mines, the spacious historic homes on the great plantations, the beautiful

fields of ribbon-like sugar cane and the pale green waves of the rice fields. Bus lines offer unusual opportunities to those who would otherwise never be able to journey through these fascinating sections of the Pelican State. That advantage has been taken of this method of travel not alone by visitors to the state, but by residents, likewise, can be seen from the following statements. Modern, up-to-date parlor-car buses, costing from $6000 to $10,000 each and with accommodations for from sixteen to thirty passengers, operate from New Orleans to Houma and Thibodaux; from Baton Rouge to the new Louisiana State University; from Alexandria to Lake Charles, Baton Rouge, Monroe, Natchitoches, and Leesville; from Lafayette to Lake Charles; from Shreveport to Monroe, Mansfield, Natchitoches, Minden, Homer, Haynesville, and to Marshall and Texarkana, Texas. The variety of buses is large since there are 25 established motor-bus lines operating from 2 to 43 motor cars daily. One of these lines covers with its 43 buses a distance of 5178 miles daily. There are about 30 individual bus lines operating to as many points from the Standard Oil Refinery near Baton Rouge. In addition to this bus service, there are many privately owned service cars which operate from one point to another in the state. Besides these, 1487 school transfers use the highways of the state every school day in the year, transporting 46,173 pupils (1924–1925).

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CHAPTER VI

NATURAL RESOURCES

Nature has dealt generously with Louisiana. In variety and abundance of forests, minerals, fisheries, birds, and wild animals she ranks high among the states of the Union. Each of these sources of wealth has been a challenge to investors, and the vastness of the supply has led to extravagant methods of use and regrettable waste. This became apparent to statesmen, and the natural resources of Louisiana were placed under the direct protection of the government, with the state constitution providing that these resources must be protected, conserved, and replenished.

To carry this provision of the state government into effect, the Department of Conservation was created and charged with the responsibility of preventing waste or wasteful use of Louisiana's natural wealth. Careful surveys and special investigations have been made by the department for the purpose of determining the most efficient and economic methods of extracting the wealth which nature has given and applying this wealth to the highest uses of man.

As we study forests, minerals, fisheries, birds, and wild animals — all of which are apparently inexhaustible — and remember that these represent millions in material wealth in the markets of the world, it is not surprising that capital is inclined to exploit and waste. In this

light the importance of conservation cannot be too deeply impressed upon Louisianians (Appendix, Table 32).

The forests. The early settlers of Louisiana found an unbroken forest extending northward from New Orleans. The entire state was heavily wooded excepting the prairies of the southwest and the sea marshes along the coast. Louisiana possesses a greater variety of trees than any other state in the Union with the possible exception of Florida. Between seventy and eighty distinct kinds are found in the state.

A Pine Forest

The stately long-leaf yellow pine, with its taproot striking deep into the subsoil, flourishes on the thin sandy soil of the hill sections. The better grades of hardwood are found in the somewhat lower regions and along the streams fed by perennial springs. Cypress and tupelo abound in the deeper swamps or back lands.

By lumbermen, trees are classified as soft woods and hardwoods. The soft woods (pine, cypress, and cedar)

have needle-like leaves and these furnish the bulk of material for the lumber industry of Louisiana. The hardwoods include the broad-leaved varieties:

ash	cherry	hickory	pecan
basswood	chinquapin	holly	persimmon
bay	cottonwood	hornbeam	poplar
beech	dogwood	iron wood	sassafras
birch	elm	magnolia	sycamore
black locust	gum	maple	tulip
black walnut	hackberry	oak	tupelo
walnut		willow	

Certain kinds of trees are of many species. Varieties of pine are distinguished as long-leaf, short-leaf, loblolly, and slash. The leading varieties of oak are live oak, red oak, and white oak; while the tupelo leads in importance among varieties of gum.

The most important tree in Louisiana is the long-leaf yellow pine. As building material, it is the most widely known of all southern pines. In addition to its excellence as building material, the long-leaf pine furnishes valuable by-products, such as rosin, turpentine, and other "naval stores," as these products are termed. Wood alcohol and pulp for kraft paper are other commercial by-products.

By 1875 the northeastern states had seriously depleted their supply of timber and southern pine began to take its place. Louisiana has constantly furnished to commerce her full share of timber products and in 1923 yellow pine lumber from Louisiana forests equaled 20 per cent of the total lumber production of the United States and was valued at $84,511,480.

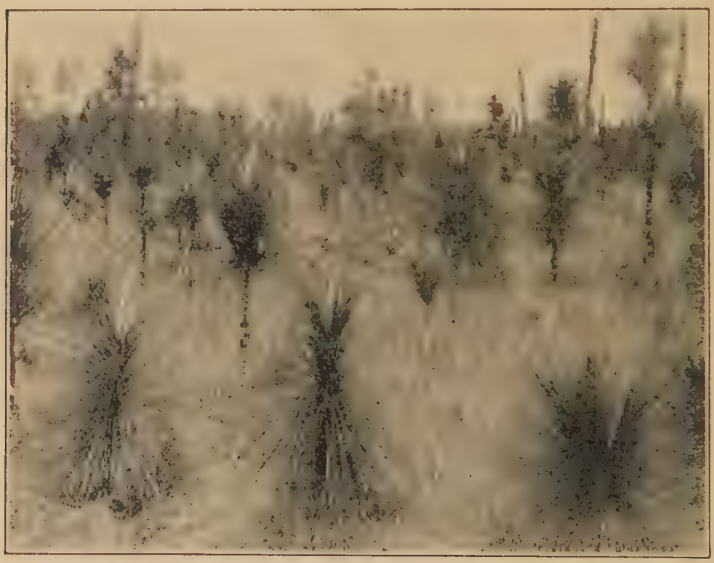
Extensive consumption of timber, with marked reduc-

tion in the remaining supplies, must be recognized as one of the outstanding problems of the state. A comparison of the present standing timber, estimated at 2,427,000 acres, with the original forest area approximating 22,000,000 acres, indicates that Louisiana's forests are approaching exhaustion. As the timber supply diminishes, revenues derived from forest products diminish; the exhaustion of timber in several parishes has decreased the revenues of those parishes more than one million dollars each. This deficit must be met by revenues from other sources.

The economic problem created by these conditions has greatly stimulated the study of forests, and the state has adopted a program of fire prevention and reforestation with very satisfactory results. As much of the timber now being cut is second growth and as lumbermen are now learning to make trees grow again on denuded areas not fitted for other crops, it is conceded that our timber supply need never be exhausted if our forests are scientifically conserved, protected, and replanted.

The manufacture of kraft paper from wood pulp, consuming many cords of wood per day, is a growing industry. As this industry develops and paper mills increase, more trees will be needed to supply the demand. However, the most enlightened foresters of America tell us that there is no reason why Louisiana, with its wonderful climate and splendid conditions for growing trees, should not be capable of supplying the raw materials for perpetual manufacture of lumber and paper. To accomplish this, public enlightenment and endeavor must include the twofold program: forest protection and reforestation. For

several years Louisiana has maintained a forest preserve at Urania, including portions of Winn, Caldwell, Grant, and La Salle parishes. Here experiments in reforestation have resulted so favorably as to attract nation-wide attention. The forestry school of Yale University annually brings a class to Urania for practical instruction in reforestation. This is a part of the educational program so vital to the success of the department.



Reforestation

Range hogs and range fires are chief among the enemies constantly assailing Louisiana forests. These enemies are fortified by the precedents of generations which do not give way without struggle. The range hog feeds upon the tender roots of baby pines and is a menace to

the forest. Its economic value is small, and there is a growing public sentiment against this nuisance. The division of forestry, in coöperation with landowners, is becoming thoroughly organized; fire towers are being erected with lookouts constantly on watch to spot fires; fire patrolmen are employed to extinguish the fires that break out; telephones connect patrolmen and lookouts; fire lines provide means of defense against spreading fires, and roads and bridges facilitate speedy action. The program is practical and is being supported by better public understanding.

Among other noteworthy resources of our forests, particular mention should be made of Spanish moss, charcoal, shrubs, and weeds. Conservation Department reports for 1924 set the value of moss for that year at $750,000 and the quantity at 25,000,000 pounds. Moss-draped trees add beauty and grandeur to the forest, thus providing aesthetic pleasure which cannot be defined in terms of money.

In 1924 there were marketed 146,600 tons of charcoal produced from pine trees and valued at $2,000,000.

Louisiana possesses an abundant supply of shrubs, plants, and weeds from which drugs and oils can be made. Experts name fifty or more such plants in Louisiana, among which are sassafras, sumac, palmetto, and osage orange, or *bois d'arc*. Sassafras is extensively distilled in several states and might be profitably utilized in Louisiana. Tannin made from sumac gives a softness to fine gloves and bookbinding leathers that is difficult to obtain with other tanning materials. It is said that Mer Rouge in Morehouse Parish derives its name from the abundance

A Pine Nursery

of sumac bushes formerly growing in this vicinity and in the fall of the year giving the landscape the appearance of a "red sea." Swamp palmetto and osage orange are abundant in Louisiana and offer commercial possibilities in the tanning and dyeing industries.

Oil. Louisiana's greatest source of mineral wealth is found in the oil and gas fields. Prospecting for petroleum in the southern part of the state resulted in the discovery and development of several important oil pools. The first commercial well was drilled at Anse La Butte, in St. Martin Parish. This was followed by drillings in Acadia, Jefferson Davis, and Calcasieu parishes and the discovery of productive fields in other portions of the state. At Jennings there is a veteran field which is still productive, and the Vinton and Edgerly fields are responsible for much of the wealth of Calcasieu Parish.

Drilling activities shifted from the south to the north, and the important fields of northern Louisiana begin with the Caddo field in 1906. The Claiborne and Caddo districts in the northwestern part of the state have held preëminence in production since 1910. In the northern and central parishes, chief among which are Bossier, Caddo, Claiborne, De Soto, Red River, La Salle, and Webster, oil is found in pools at irregular intervals. These "pools" are not cavernous reservoirs but porous rock called "oil sands."

Louisiana's petroleum products are of great value and particular significance because, of all the important resources of the United States, petroleum is one of the most limited and involves a high percentage of waste. In the Appalachian area, which was once the center of production,

the amount produced has declined until that region is now unimportant in point of volume. The mid-continent district, of which Louisiana is a part, at present leads in the production of crude petroleum in the United States. Since petroleum is an exhaustible resource and also one of immense commercial value, there has arisen a world-wide struggle between oil companies and between nations for the control of the petroleum fields wherever they may be discovered. The commercial value of Louisiana's petroleum is readily seen when we learn that crude oil yields several hundred by-products when refined, chief among which are gasoline, naphtha, kerosene, and lubricating oils. Each of these is now essential to the commerce of the world and it is not strange that their control is largely sought by captains of international trade.

Petroleum varies in color from a light straw, through amber, red, and brown, to black; oils from the same locality are usually nearly the same in color. In Louisiana, petroleum is dark brown, almost black. In consistency petroleum varies from a thin liquid, like gasoline, to a viscous liquid similar to thick molasses or hot tar.

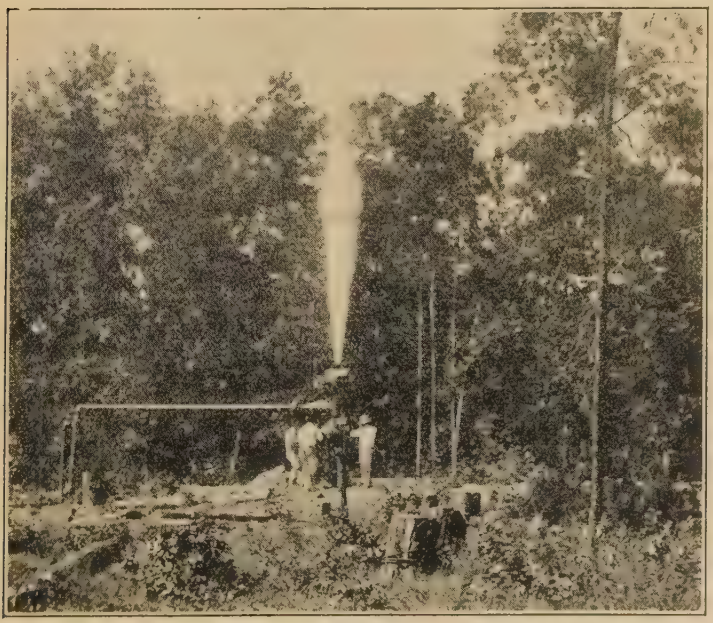
Producing wells vary in depth from three hundred feet to several thousand feet. Where oil is found, brine almost invariably occurs and gas is frequently observed.

Beginning at the Texas line on the west and the Arkansas line on the north, a heavy oil-producing area extends east and southeast to the Urania and Tullos field in La Salle Parish, with late developments as far south as White Sulphur Springs. New fields are also being developed in Grant, Winn, and Union parishes.

Among the twenty oil-producing states of the Union,

in 1925 Louisiana ranked ninth in grand total production. In 1922 the state occupied fourth place in the amount produced, but dropped to seventh place during 1924. It is estimated that, up to the close of 1925, Louisiana, since it became an oil-producing state, has contributed about 351,605,000 barrels, and that 7800 wells have been drilled for oil at an average cost of $18,000 each. After 1920 the annual production of oil declined somewhat.

Gas. Perhaps the most important mineral resource of Louisiana is natural gas. When deposited by nature beneath the surface it was stored in microscopic cavities between grains of sand or in very porous rocks. In some



A Gas Well

of these deposits mighty compression prevails and, when a well is drilled, the gas escapes with tremendous force. This pressure declines as the gas escapes and the value of the well depreciates accordingly.

It is interesting to note the nature and tendencies of gas. Gas is a fluid composed of a large number of molecules continually in motion with a tendency to get farther and farther apart. This characteristic is the basic cause of gas flow. The constant bombardment of molecules against one another results in self-transmission, an inherent power of gas. While flowing long distances through transmission lines the molecules get so far apart that compression disappears and it becomes necessary to recompress or squeeze the gas into smaller volume, in order that it may continue to travel through the pipes. This is accomplished by a mechanical device called a gas compressor.

Gases vary greatly in nature. Some are heavy while others are light in weight; some are high in heating value while others are low; some are wet, others dry. Gas is classed as wet or dry according to the amount of gasoline it contains. The output from different portions of the same field may vary in gasoline content. Gas may contain a small quantity of gasoline vapors and yet be termed dry. But a strictly dry gas contains no gasoline vapors; it is not intimately associated with oil. Wet gas, however, is associated with oil and is ordinarily known as casing-head natural gas. The gas in our great Monroe field is not accompanied by oil, is of remarkably high heat value, and varies greatly in gasoline content. Wells in the southeastern portion of the field yield as high as

600 gallons of gasoline to 1,000,000 cubic feet of gas, while the gas in other wells is much drier.

The recovery of gasoline from natural gas has assumed large proportions in Louisiana, 47,847,216 gallons of gasoline having been recovered from 154,414,534,000 cubic feet of gas in 1924.

Louisiana is accredited by the United States Government with having one of the greatest natural gas fields in the Union. In 1925 she ranked fourth among twenty-three gas-producing states. The outstanding deposit in Louisiana is the Monroe field, embracing Ouachita, Morehouse, and Union parishes, where over three fourths of the gas of the state is produced. In 1909 the discovery well in the Monroe City Park was drilled and in 1916 the commercial development of the field began. Gas was discovered in the Caddo district, however, at a much earlier date, 1904, and that field was under development in 1912.

Other leading fields are Gleason, Spring Hill, and Cotton Valley in Webster Parish; Elm Grove and Spring Hill in Bossier Parish; and Waskom, Caddo, and Bethany in Caddo Parish. Gas is also produced in De Soto, Red River, Richland, and Terrebonne parishes, while test wells drilled in several other locations show smaller quantities. (See Figure 21, page 175.)

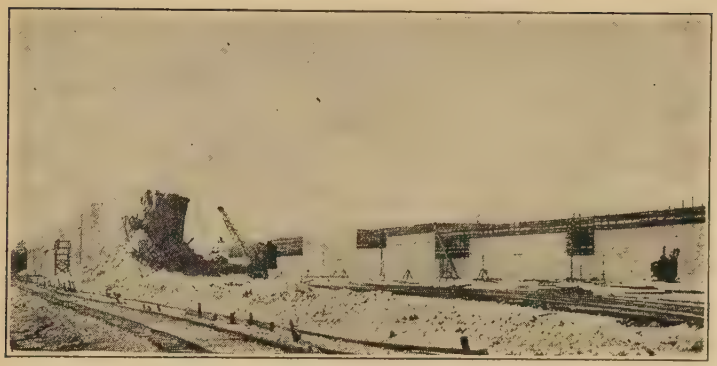
Accurate figures showing total production since gas was first discovered cannot be given. This is due to the fact that although considerable quantities of gas were consumed industrially, this gas was not metered and other vast quantities have escaped from the wells and wasted. Records of early production were not kept, but some idea

of the magnitude of the figures may be had when we note that the metered gas for 1926 was about 160,542,157,999 cubic feet.

Natural gas is an exhaustible resource. Unlike forests, it cannot be replaced. When once used it is gone forever. Geological indications are that our gas supply will be of long duration, but the amount will eventually be exhausted. The state has, therefore, certain rules and regulations relative to drilling operations and to the management and use of gas, and the Department of Conservation is endeavoring to direct the development of the field in such a way as to insure continuity of service for the longest possible time. True conservation means wise use with maximum efficiency and minimum waste.

When natural gas burns, combustion is either complete or incomplete. If combustion is complete the carbon of the gas unites with the oxygen of the air, forming carbon dioxide; the hydrogen of the gas unites with the oxygen of the air, forming water vapor. If combustion is not perfect, then carbon monoxide, which is a deadly poison, may be formed. Carbon black is made by a process of incomplete combustion, with the flame coming in contact with a metallic surface. More improved appliances for making carbon black, less reckless and wasteful use of gas in homes and factories, and better operations in the field are essential if we would prolong the life of our gas fields.

Sulphur. Prior to oil developments in 1902 and the beginning of sulphur production in 1904, Louisiana had no recognition as a mining state. When the Frasch process was introduced Louisiana immediately took her



Sulphur

place as the leading producer of this mineral. The Frasch process is an ingenious and efficient mechanical method of melting sulphur and raising it to the surface by steam.

From 1904 to 1913, when Texas began producing sulphur by a similar process of mining, Louisiana had almost monopolized its production in the United States. The development of this deposit not only supplied practically all the crude sulphur in our country but caused the world's largest sulphur industry to shift from Sicily to the United States. Sulphur became one of America's exports instead of imports.

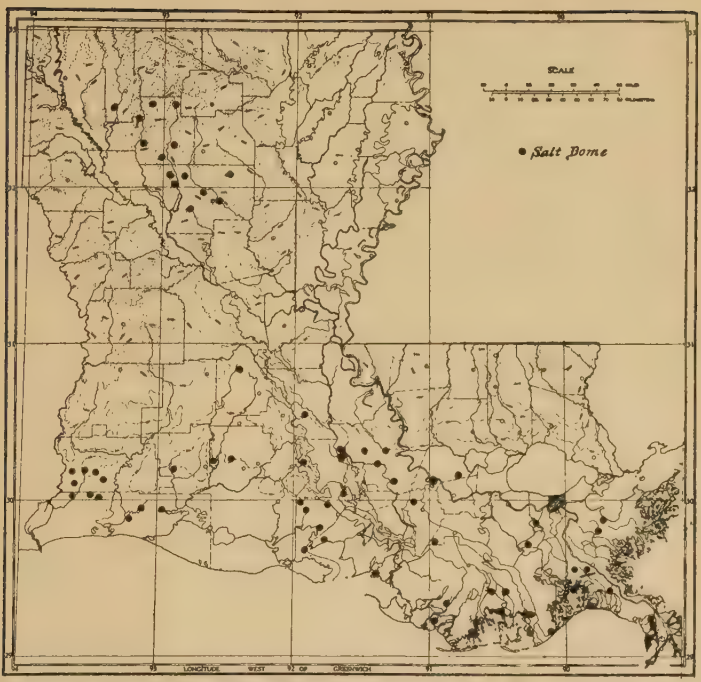
Since the deposit was a thousand feet below the earth's surface, it was difficult to determine the extent of the sulphur area, but the supply was thought to be inexhaustible. For about twenty years there were annually produced approximately four hundred thousand tons, some years a great deal more, other years somewhat less. Mining operations were begun as early as 1894, when five tons

were recorded. The peak of production came in 1922 with 1,146,860 tons (Appendix, Table 30).

The sulphur mines in Calcasieu Parish, near Lake Charles, have produced approximately ten million tons of almost pure sulphur. This deposit became commercially exhausted after almost thirty years of constant activity, and sulphur production ceased. No wells have been in operation since 1924, but great quantities of sulphur remain in storage yet to be marketed. The northern, central, and western sections of the state are dotted with wells of sulphur water and sulphur springs, and it is quite likely that scientific investigations now being made will reveal other sulphur-bearing deposits that may be utilized.

The steps by which sulphur is converted into sulphuric acid are very simple. Sulphuric acid combined with salt forms certain chemical products which may be converted into a great number of commercial commodities. The economic value of sulphur is further increased by its use in oil refineries and in the manufacture of sugar, fertilizers, and other products too numerous to mention. The use of sulphur for medicinal purposes is by no means unimportant.

Salt. A third important mineral resource of which Louisiana has vast deposits is rock salt, 99.9 per cent pure and ranking among the main salt resources of the world. While salt domes occur in the northern and north central portions of the state, the most important deposits so far known are the domes of south Louisiana underlying the "Five Islands." Of these the Weeks, Avery, and Jefferson are the most extensively worked. At Petite Anse



Constructed on Goode's Series of Base Maps by permission of The University of Chicago Press.

Figure 9. Salt dome map

(Avery Island) test drillings show a salt layer about two thousand feet thick, separated by seventy feet of foreign material from an underlying salt bed of undetermined thickness. At Côte Carline drillings ceased before the true depth of the salt was determined. Belle Isle and Anse La Butte are underlaid by sulphur and oil as well as by salt.

Of the known salt deposits in north Louisiana the larger ones are found chiefly in three parishes. In Winn Parish

may be named the Winnfield, Coochie Brake, and Cedar Creek domes, situated in the southern half, and the Drake's, Chestnut, Price's, and Sike's domes, situated in the northern half of the parish. Distributed throughout Bienville Parish are located King's, Prothro, Rayburn's, Arcadia, Gibsland, and Vacharie domes, while to the west, in Webster Parish, is found the Bistineau dome which represents the largest of a number of old salt works furnishing salt during the War Between the States. People from Texas, Arkansas, and Mississippi coming to Lake Bistineau obtained salt by boiling the water in open kettles.

In addition to these domes there are numerous brine springs and " licks," around which vegetation is prevented from growing by range cattle licking the ground.

Having no available figures for the entire output since mining operations began, we can only show the quantity of salt taken from the soil since April 1, 1920. Between this date and December 31, 1926 Louisiana produced more than 2,500,000 tons of salt with a value that exceeds $3,810,000. During the last four years the annual production ranged around 400,000 tons, the amount in 1924 being 400,586 tons valued at $1,990,000 (Appendix, Table 19).

Since salt (sodium chloride) is one of the basic chemicals from which numerous compounds are produced, a liberal supply of this mineral is essential to the success of various manufacturing industries. Among the more important of these may be named paper mills, glass factories, soap factories, pickling vats, meat-packing and fish-curing plants. Numerous other industries consume lesser quan-

tities. With new uses and new demands for salt constantly increasing, we have but a slight conception of the true value of pure rock salt in the domes of our state.

Other minerals. *Clay* deposits of considerable extent and excellent quality are found in the state, but no accurate estimate of the value of this useful resource can be given. Because of lack of funds, proper research and surveys have not been made. A series of surveys and publications covering clay deposits has been arranged for and begun, and in the near future our citizens will have a large body of information which will be of particular interest to clay-consuming industries. The first of this series of surveys, covering the area around Shreveport and including Caddo, Bossier, De Soto, Red River, and Webster parishes, has been completed. Another for the Monroe district has been made but the results are not yet published.

Throughout the Shreveport area there is a bed of red and blue clay varying in thickness from one to ten feet. Occasionally it rises to the surface but it is usually overlaid by six to twelve inches of surface soil, often yellow in color, due to the oxidation and hydration of its iron content. The iron content affects the color of the clay product when it is burned.

Even in the more sandy sections of this area there are found clay deposits from ten to fifteen feet thick extending over an area of perhaps one half to three fourths of a square mile. Deposits covering considerable areas are occasionally near gas wells of high pressure. Such is the case in Webster Parish, where a deposit of better quality, from six to twelve feet below the surface, is located in the

center of the Bellevue oil field. This clay is suitable for pottery, sewer pipes, and all forms of tile and brick. There are very few pottery clays, and no high-grade china clays have yet been discovered. Several alluvial clays, suitable for mixture with limestone in the manufacture of hydraulic cement, are found in different portions of the state, but the best of these deposits are located in the southern part.

Sand and gravel are found in rich deposits in almost all parts of Louisiana, with the exception of the coastal parishes and alluvial bottoms. These materials are suited to road building and general concrete construction. Among the sand deposits are superior grades of white sand suited to glass manufacture. These deposits are located along the Amite River in East Baton Rouge Parish and in Morehouse and Tangipahoa parishes.

Gravel is found in great hills which appear to have been beach ridges, also in concentrated deposits in creek bottoms. The deposits are sometimes worked as small roadside pits or on a larger scale by gravel companies. The annual production of gravel approximates 230,000 cubic yards valued at about $578,000, while the sand production is approximately 436,000 cubic yards, valued at $902,000.

Limestone is another important resource not yet properly surveyed. Well drillings record beds of considerable thickness in many parts of the state and indicate that Louisiana is largely underlaid by chalky limestone.

At the Winnfield salt dome a limestone deposit outcrops on the surface over an area of between 150 and 200 acres. Test wells drilled on the dome show the limestone to be of crystalline formation ranging from 95 per cent to 99 per

cent pure calcium carbonate and about 450 feet in thickness. Beneath the limestone deposit lies rock salt of undetermined thickness, while in this region shale and sulphur are also found.

The present outstanding use of limestone is in road building, although a small kiln, operated during 1926, produced lime which was approved for use by paper manufacturers. It appears likely that in the near future, when gas is piped to the deposit near Winnfield, lime and cement will be made on a large scale.

About midway between Oakdale and Ville Platte is a deposit of porous limestone often much darker than that at Winnfield, but of nearly pure calcium carbonate burning into excellent quicklime. So far no salt, oil, or gas has been discovered accompanying it.

Shell is another of Louisiana's natural resources. Durable and beautiful roads are made of this material. The magnitude of her commerce in shells is indicated by the fact that 704,704 cubic yards, valued at $1,233,233.75, were marketed in 1924.

Gypsum, associated with other minerals, is found in several portions of the state in varying quantities. Among these deposits should be mentioned a 100-foot layer of gypsum and sulphur rock north of the Atchafalaya Bay.

Lignite, found at Dolette Hills in De Soto Parish, is in beds or layers one to three feet thick. It is also found twelve miles south of Coushatta, six miles north of Mansfield, around Keatchie, and in the Queensborough district of Shreveport. A considerable amount of lignite is available at the surface, but as yet economic conditions have not warranted its utilization.

Iron is found in northwestern Louisiana in Bossier, Caddo, and Webster parishes, but the quantity of iron ore thus far discovered is not sufficient for profitable mining.

Wild-life resources. Considered from two separate and distinct viewpoints, many forms of wild life in Louisiana are a valuable natural asset vital to state development. Birds and mammals, fisheries — both sea and inland water — varied and abundant, are mediums of pleasure and materials of industry as well. As mediums of pleasure, bountiful game, which afford ideal recreation for sportsmen, and numerous birds, which add charm to our surroundings, are æsthetic features not to be measured in terms of money. These are discussed in Chapter XV, but here we present, along with previously mentioned materials of industry, certain forms of wild life of commercial value rather than recreational. Add to these, certain other forms equally prized by sportsmen and tradesmen, and we have a wild-life resource yielding commercial products valued at more than $16,000,000 annually. Chief among these commercial products are fish and furs.

Many kinds of commercial fish, found in the extensive fresh and salt waters of Louisiana, constitute an important resource. Most outstanding among these in 1924 were oysters, with a yield of over 2,600,000 bushels, valued approximately at $3,900,000. Next in importance were shrimp, yielding 33,000,000 pounds valued at $1,700,000, followed closely in value by some of the fresh-water fish. In 1923, however, Louisiana's shrimp production exceeded that of oysters.

Besides these two outstanding varieties there are in the Gulf waters many pompano, redfish, red snapper, sheeps-

Oyster Bottoms

head, Spanish mackerel, bluefish, mullet, tarpon, and amber jack, all called salt-water fish. Catfish, buffalo, fresh-water drum, or "gaspergou," paddlefish, garfish, and various species of bass and perch, all known commercially as fresh-water fish, are found in our rivers, bayous, and fresh-water lakes. Add to these, terrapins, turtles, frogs, crabs, and mussels, and we have a resource yielding an annual income approximating $4,000,000. Including oysters and shrimp, the annual income from fisheries is approximately $10,000,000.

The oyster. The especial importance of the oyster and the shrimp justifies further mention. The oyster, popularly known as a bivalve, is not hardy in its early stages of

growth. The egg, discharged into the water, develops into a small oyster larva, called "spat," upon which a shell begins to form, soon covering the entire body. This shell is at first thin and fragile like an eggshell. After swimming about freely for fourteen days or less the spat ceases to move from place to place and adheres to any foreign body to which it may become attached. Once set, the oyster never wanders again of its own volition. It awaits such fate as may be in store for it, active only in opening its shell to receive food from the water and closing it to exclude objectionable matter. Nature requires that the spat attach itself to some hard clean surface for permanent abode. A large proportion of the spat is attached to marketable oysters and destroyed. Scientists estimate that from the many millions of eggs furnished by a large female oyster in one season, perhaps only a dozen reach the adult stage.

Often numerous oysters fasten themselves upon the same hard substance and, as growth proceeds, a crowded cluster results. This condition is unfavorable to the highest development because, thus crowded, the body of the oyster is ill shaped, the flavor poor, and growth retarded. These defects are prevented by breaking up the clusters and planting the oysters elsewhere. This is one phase of oyster cultivation. Another phase of oyster cultivation consists in scattering shells on water bottoms not hard and clean by nature in order that the spat will have a favorable surface on which to attach itself. Louisiana has the greatest natural foundation for the development of the oyster industry that is now known in the world.

Louisiana is the third largest producer of oysters, being excelled only by Maryland and Virginia. The state has the following oyster-producing parishes with acreage suited to oyster culture as tabulated below:

St. Bernard	146,500
Plaquemines	171,000
Jefferson	28,000
Lafourche	3,000
Terrebonne	122,000
Iberia	4,000
Vermilion	2,000
Cameron	500
Total acreage adapted to oyster culture	477,000

The coastal waters of Louisiana present many physical and biological characteristics which render them especially favorable to oyster production. Four main conditions affecting the growth of oysters are: density of the water, temperature of the water, character and consistency of the bottom, and quantity of oyster food.

The oyster thrives where fresh and salt waters are blended and is not found in the open sea. It is confined almost exclusively to bays, sounds, and estuaries. In these inclosed waters, rendered brackish by drainage from the land, the oyster's food is derived from the fresh water, while the lime for making shell is supplied from the salt water. When swollen streams discharge unusually large quantities of fresh water close to oyster beds, the oyster closes its shell tightly, thus excluding the fresh water. Extreme flood waters have at times destroyed portions of our oyster beds.

The temperature of the water is an important factor,

especially in relation to the spat. Very high or very low temperature, or sudden changes in temperature during the spawning season, will kill the spat. Such unfavorable temperatures are practically unknown in our mild and equable climate.

When the water bottoms are not naturally firm, it is necessary to scatter hard substances, such as old shells, upon which the spat attaches itself. This prevents the oyster from being smothered in mud, ooze, and shifting sand. Such practice, customary in many North Atlantic waters, is not so common here because large areas of our coastal bay bottoms are by nature hard and clean and well protected from ocean currents.

The nature and abundance of the food supply is of prime importance. The rapidity of growth and the tenderness and flavor of oysters depend to a marked degree upon the food supply. In the North Atlantic waters almost twice as many years are required to produce an oyster six inches long as in our Gulf coast waters. When we consider the rank vegetation of our marshes and swamps and fertile fields, from which numerous streams carry large quantities of vegetable matter to the Gulf, and when we remember also that vegetable matter is oyster food, it is very evident that nature favors oyster production in Louisiana. While oysters are found as far west as the Cameron waters, our most extensive beds lie eastward from Shell Reef in the inclosed areas where many food-laden streams enter the Gulf and where ocean currents are farther from the shore.

The shrimp. We have two main kinds of shrimp, namely, the fresh-water, or river, shrimp, and a large salt-water shrimp living offshore in the Gulf waters. The

fresh-water shrimp, which is a rather stout species about three inches long, is sold mainly in our local markets. Extending a distance of eighteen miles from the shore in waters from six to sixty feet deep, there are immense fishing grounds affording a supply of several species of toothsome salt-water shrimp, the most important variety of which is the *Penaeus Setiferus*, or lake shrimp, with adults averaging six to eight inches in length. Louisiana is the leading state of the Union in this variety, having an output greater than the combined output of all other Gulf states. In 1924 our state produced 33,000,000 pounds of salt-water shrimp valued at $1,712,000.

Salt-water shrimp are characterized by two noteworthy periods of migration. Spawning takes place in the open waters; the young then slowly migrate far inland until they approach maturity, when they begin a second period of migration back toward the sea, where they remain. We thus see that the large shrimp, constituting the chief marketable product, are confined exclusively to Gulf waters, while immature specimens are found in our landlocked bays and lakes. Perhaps this accounts for the name "lake shrimp," as this species is commonly called. Their movements, however, are so affected by weather conditions and water currents as to appear very irregular, even erratic, and are not well marked into the two periods mentioned above.

Another inherent tendency of shrimp is to separate into schools of uniformly sized individuals. This makes it easier for fishermen to protect young shrimp. Feeding upon bits of roots, stems, and leaves of salt sea-marsh grasses that have been washed into the bays and shallow

Fur Animals: 1. Mink. 2. Gray Fox. 3. Raccoon. 4. Opossum. 5. Spotted Skunk or "Civet"

lagoons, the schools move slowly along the bottom in mud and ooze. In places where food is abundant, they gather into such large schools as to muddy the water while they feed.

As a result of the study of the habits of shrimp which our state commenced as far back as 1906, we now have particular laws to protect and regulate the shrimp industry, naming two close seasons for Timbalier Bay, East Côte Blanche Bay, Atchafalaya Bay, West Barataria Bay, and other bays and sounds along our coasts.

The alligator. In our waters is also found the alligator, classed by scientists as a saurian, but listed among fishery products by the United States Bureau of Fisheries. With a yield in 1924 of 21,855 hides valued at $20,160, the alligator deserves mention. Though commonly considered an enemy of ducks and muskrats, the alligator serves man by destroying owls and particularly the coots which are monopolizing many duck feeding grounds. The alligator is outlawed in our coast parishes, also in Orleans, St. Charles, St. John, and St. James parishes. In other parishes a close season is provided for its protection.

Fur animals. Pelts from fur animals constitute an important item in Louisiana's wealth. From *The Fur Animals of Louisiana* and other bulletins and reports issued by the Department of Conservation we glean the following information. The value of fur animals to trappers during the season of 1924–1925 was $6,457,000, representing 6,730,000 pelts, of which 6,196,000 were muskrat. Louisiana's annual catch ranks with that of the leading fur-producing states of the Union and exceeds

the combined output of all the provinces of the Dominion of Canada. According to the United States Biological Survey, Alaska, during the season 1924–1925, produced 285,545 pelts of all kinds. Canada, according to its Bureau of Statistics, produced 3,820,326 pelts. Pennsylvania, one of America's leading producers, showed during the same season a catch of 1,637,307 pelts. These figures seem small when compared with production in Louisiana. While it is true that Louisiana's principal fur is muskrat, it is well to note that two thirds of Canada's pelts were muskrat, and that Louisiana's catch of 534,000 pelts of other animals compared favorably with Alaska's total catch of 285,545. Figures issued by the National Association of the Fur Trade show eleven to twelve million muskrat pelts used in the 1924–1925 season. Comparing these with the 6,196,000 muskrat pelts taken in Louisiana, it is evident that our state produced over one half of all the muskrat pelts used by the garment-making trade (Appendix, Table 34).

Aside from the muskrat, other important fur animals are found: the opossum, raccoon, mink, skunk, civet or spotted skunk, otter, wolf, wildcat, weasel, and beaver. There are two kinds of opossum in Louisiana, a small dark opossum near the Gulf coast and a larger animal inhabiting the northern, central, and eastern parts of the state. Though the opossum is found in every parish, including Orleans, it is most abundant in Terrebonne, Lafourche, Calcasieu, Jefferson, Natchitoches, Plaquemines, Beauregard, Assumption, Rapides, and Allen parishes, named in the order of quantity of production. Approximately a quarter of a million opossum pelts are

exported from the state annually, thus making Louisiana the largest opossum fur-producing state in the Union. Louisiana is also the largest raccoon fur-producing state. In the swamps and marshes there is found a reddish or yellowish raccoon, while darker raccoons inhabit the wooded swamps. Though found in greater numbers in the coastal belt, these animals are well distributed throughout the state.

In mink pelts, too, Louisiana exceeds all other states of the Union and is exceeded in Canada only by the province of Ontario, whose 1924–1925 catch was 68,138 pelts as compared with Louisiana's 67,441. The mink is found throughout the state, but the greatest numbers of these animals live in the heavily wooded water bottoms and in the cypress and tupelo swamps. Aside from otter skins, the pelt of the mink is the most individually valuable fur taken in Louisiana. The mink, being surpassed by few animals in richness of color, gloss, and fineness of fur, is one of the more important animals of the American fur trade.

There are two varieties of skunk in Louisiana, a small black skunk and a larger animal having white stripes on the sides of its body. There is also the diminutive spotted skunk, or "civet cat," as it is called by the fur trade. Skunks are trapped in every parish and the catch amounts to 15,000 or 20,000 pelts annually.

The otter has a rich, dark-brown fur of fine quality which frequently brings the Louisiana trapper $15 to $25. The annual catch is slightly more than 2000 pelts. Though the otter is found in practically every parish, the catch is greatest in Terrebonne, St. Mary, Cameron, Plaque-

mines, Iberville, Ascension, Livingston, East Carroll, Iberia, Vermilion, Lafourche, Assumption, Pointe Coupée, St. Martin, Washington, and West Feliciana parishes.

Weasel, or ermine, though not plentiful, are found in some parts of Louisiana, particularly in St. James Parish and those lands adjacent to it east of the Mississippi River. Like the ermine of the North, the weasel possesses the characteristic black-tipped tail but, instead of becoming pure white in winter, the Louisiana weasel retains its dull brown color.

The fox, the wolf, and the wildcat are found in the higher heavier wooded sections, but are not very important in the fur trade. The presence of numerous fur animals in Louisiana may be attributed to the existence of abundant cover and, to some extent, to the absence of persistent hunting and trapping in recent years. The experience of other states in the partial extermination of fur animals has led to the protection of this valuable resource in Louisiana. To insure the perpetuity of the fur-trapping industry, our laws designate a close season, during which wild fur animals may rear their young unmolested by man. The muskrat, found almost exclusively in Louisiana and ranking first among fur animals, justifies especial attention.

The muskrat. The extermination of other species of fur animals, a condition which naturally follows the settlement of a country by man, has made the muskrat an increasingly important fur animal, if not the most important fur animal of America. Louisiana therefore has a great asset in the 2,500,000 acres of muskrat lands comprising a strip of territory lying near or adjacent to the

Gulf coast. Though found throughout this area, muskrats are more abundant in St. Bernard, Plaquemines, and Cameron parishes.

In general habits, the muskrat, or musquash, as it is called by the London fur trade, is chiefly nocturnal. When not disturbed, however, it may be seen during daylight, either swimming or moving about on the land. Using green vegetation cut off near the ground, it builds houses varying in size from four to six or more feet in basal diameter. These houses are heaped up without orderly arrangement into a dome-like mass having a well-packed matted roof two or three feet above the water level. Entrance is made through "dive holes" or "plunge holes" below the surface of the ground. The interior of the house contains one or more rooms above the water level. Surrounding it are regular labyrinths of underground runways and surface trails. Traversing surface runways, the young feed immediately around the home, while the adults venture farther away, seeking tender bases, roots, and tubers of rushes and other aquatic plants as food.

The muskrat pelt is characterized by long overhairs with an exceedingly dense underfur. It is used either in an undyed state, or made to represent seal by shearing and dyeing the skin after the overhair has been removed. It is then called "Hudson Seal" by furriers.

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CHAPTER VII

AGRICULTURE AND ALLIED INDUSTRIES

Importance. Louisiana is today, as she has been since the days of the early French settlers and will likely continue to be for many years in the future, primarily and predominantly an agricultural state. In such respects as the number of people engaged in the industry, the capital investment made, and the financial returns derived, agriculture holds first place among the occupations of the people of Louisiana. In 1925 the farm population of the state was 696,179, and the number of farms 132,450. The value of all farm property, including land, buildings, implements, and live stock, was $385,910,844; the value of farm products was estimated at $200,000,000.

Other industries have, from time to time, gained in relative importance when compared with agriculture. This has been notably the case with lumbering and petroleum oil production and refining. Local trade, manufacturing, and interstate and foreign commerce have likewise, during the past quarter century, rapidly gained in relative importance and may at some time in the future take precedence over agriculture; but the tillage of the soil and live-stock husbandry are today the leading industries of Louisiana.

Land utilization. Louisiana has a total land area of 29,061,760 acres, of which 8,837,502 acres may be classed as improved farm land. In 1924 crops were grown on

only 3,750,000 acres of the farm land, or about one eighth of the state's total land area. The agricultural possibilities of the state may be conjectured from the foregoing figures and from the fact that the acreage of denuded timberland is as great as, or greater than, that of the so-called improved farm land. Besides, there are more than 4,000,000 acres in marsh land of the highest fertility, the greater part of which can be reclaimed for farming purposes or the raising of live stock. When fully developed, therefore, Louisiana may well expect to have 20,000,000 acres of land in cultivation, of which about half will be found in the alluvial sections of the state.

Louisiana soils. (As explained elsewhere, Louisiana has a variety of soils. The most important of these is the alluvial soil or "made land," formed by the deposits brought down by the flood waters of the Mississippi River. Of the state's total land area (45,000 square miles) about one third consists of this alluvial land. For countless ages, the great Father of Waters has, through its many tributaries, gathered within its current the richest soil and best plant food found in the thirty states that comprise its drainage basin; and it has deposited this alluvium as sediment along its lower flood plain. It is from these deposits that the south Louisiana lands and the whole delta area of the Mississippi and Red rivers have been built up on the floor of the Gulf of Mexico. Further enriching this naturally fertile soil, rank vegetation has year by year grown and decayed, thus adding humus to the other essential ingredients of plant food. (A more detailed description of Louisiana soils has been given in Chapter III.)

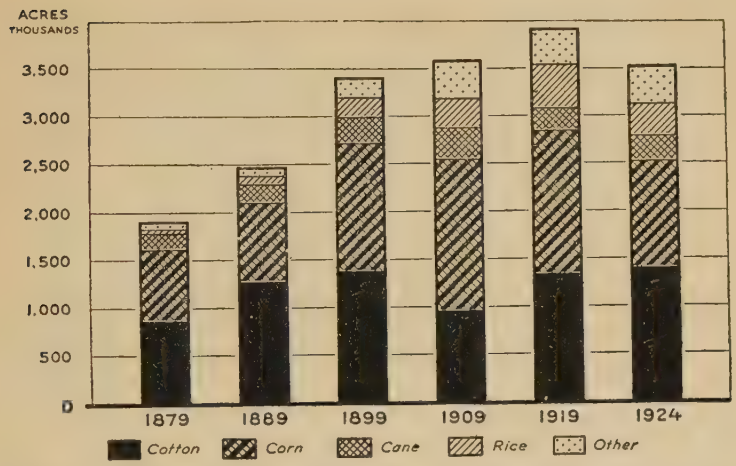

Figure 10. Acreage of crops in Louisiana. Census years 1879–1924.

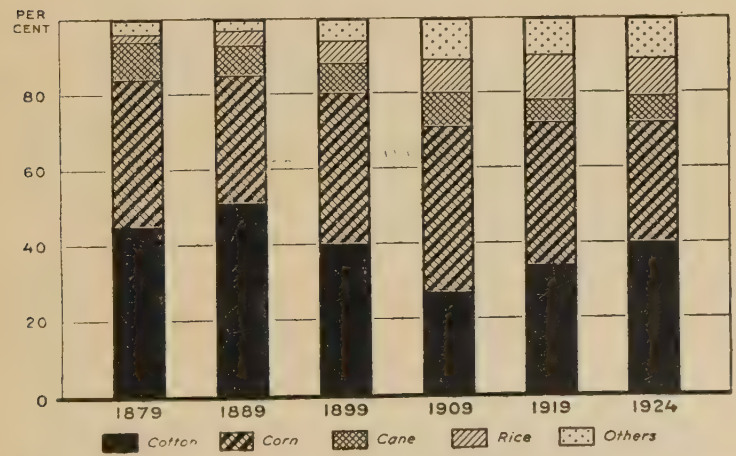

Figure 11. Percentage of cropped land in principal crops. Census years 1879–1924.

Variety of crops. The four great staple crops of Louisiana are cotton, corn, sugar cane, and rice. The annual value of these farm products far exceeds that of all other crops combined. Among the less staple and the fancy crops grown for market, the following are important: Irish potatoes, sweet potatoes, hay (Bermuda and Lespedeza), vegetables (truck), cowpeas, velvet beans, soy (soja) beans, alfalfa, oats, strawberries, citrus fruits, watermelons, pecans, peanuts, and tobacco. Other crops of minor importance are native grass and *paille-fine* (fine straw) hay, white and other clovers, sorghum, peaches, pears, plums, figs, and cantaloupes. Wheat has been grown in the northern tier of parishes, but it has no significance as a state crop (Appendix, Table 17).

The Major Crops

Cotton. Cotton is the leading crop of Louisiana, as it is of the entire Southland. The money value of lint and seed almost equals that of six other leading crops. Not only are more people engaged in its production and dependent on it for their livelihood than is the case with any other crop, but it also excels all others in marketability. Likewise, it holds first place in the acreage it utilizes and, because of the nature of the operations involved in its production, it leads in popular favor.

Cotton is grown in fifty-one of the sixty-four parishes of the state. The thirteen parishes, Orleans excepted, that report no cotton crop are those that lead in sugar-cane production. The area of farm land devoted to cotton production is greater in the northern half of the state;

but the heavy cotton-producing regions are in the fertile river bottoms of the Mississippi and the Red from Avoyelles Parish northward and northwestward. The upland areas of south-central Louisiana also produce large crops of cotton.

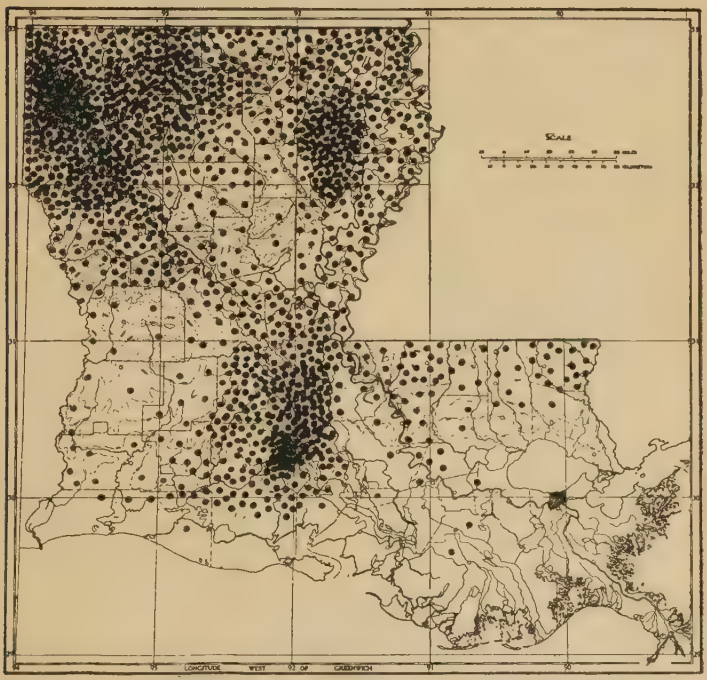

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Figure 12. Cotton acreage in 1924. Each dot represents 1000 acres.

In 1925 the total area planted to cotton in the state was 1,854,000 acres, and the production was 911,540 bales

Loading Sugar Cane in the Field

Note the stripped cane in the foreground.

(500 lb. each). The market value of the crop was $92,000,000.

The size of the cotton crop is determined by several factors, such as acreage, kind of growing season, soil fertility, methods of cultivation, diseases, and ravages of the boll weevil and other insects. Since the yield per acre during late years is being largely increased by improved methods of cultivation and by the use of fertilizers which bring the crop to maturity earlier, and since cotton exerts a powerful influence on national and world trade, another noteworthy factor influencing the size of the cotton crop should be mentioned. When consumption is not great enough to utilize the entire crop, production must be reduced or prices will fall below the cost of production. When prices are low, American and foreign consumers of raw cotton lay in large stocks. Such cotton held over from one year to the other must be taken into account by cotton farmers; thus the acreage in any given year is largely controlled by the success of the crop of the preceding year.

The boll weevil is the great insect enemy of the cotton plant. Between 1905 and 1910 the cotton farmers of Louisiana were in despair over the menace of the weevil. In the year preceding its advent into the state (1904) the cotton crop amounted to 1,089,526 bales; in 1910 it had dropped to 246,000 bales, a reduction of more than 75 per cent in six years. But gradually the cotton grower was able partly to subdue this enemy of his economic welfare; so that today the weevil is not counted an unmixed evil. Its rapid spread over the entire cotton-producing area of the South and its ravages to the crop prevent overproduction and thus tend to avert demoralization of the industry.

If there were not menaces to cotton like diseases, the boll weevil, and other insect enemies, the South's crop on the present acreage might well exceed 25,000,000 bales; and, as the world's annual consumption is only about 16,000,000 bales, such overproduction would be fatal to the South's and Louisiana's leading industry.

Sugar cane. Sugar cane is one of Louisiana's four most important crops. Its production in continental United States is practically confined to Louisiana. The consumption of cane sugar in this country is large, and Louisiana is able to supply only a small part of the demand. Cuba is the chief source of imported cane sugar.

At one time sugar cane and sugar production were the state's chief source of wealth. In recent years the industry has suffered from adverse natural and economic conditions, and therefore does not today hold so prominent a place as formerly in the agriculture of Louisiana. The cane borer, the mosaic disease, and the root disease are the great natural enemies of the sugar cane. Low market prices and inadequate tariff protection have also been detrimental to the sugar industry. The hopes of the sugar planters of Louisiana are today centered on the new varieties of the P. O. J. cane, which is resistant to disease and gives promise of reëstablishing the industry.

Cane used for sugar production is grown in twenty-eight parishes; but the chief growing area of this crop is the famed " Sugar Bowl " of Louisiana, which comprises the following parishes: Terrebonne, St. Mary, Lafourche, Assumption, Ascension, Iberville, Pointe Coupée, West Baton Rouge, and St. John the Baptist. For syrup production, cane is grown in nearly every parish in the state.

Sugar cane thrives best on silt-loam or clay-loam soils, of which the alluvial lands of the state provide a large acreage. The limitations of the industry are set by the large capital and operating investments it requires and by the hard labor and heavy team work it entails. The harvesting of the crop is also a laborious process. Unlike cotton, which is the favorite crop of small farmers and

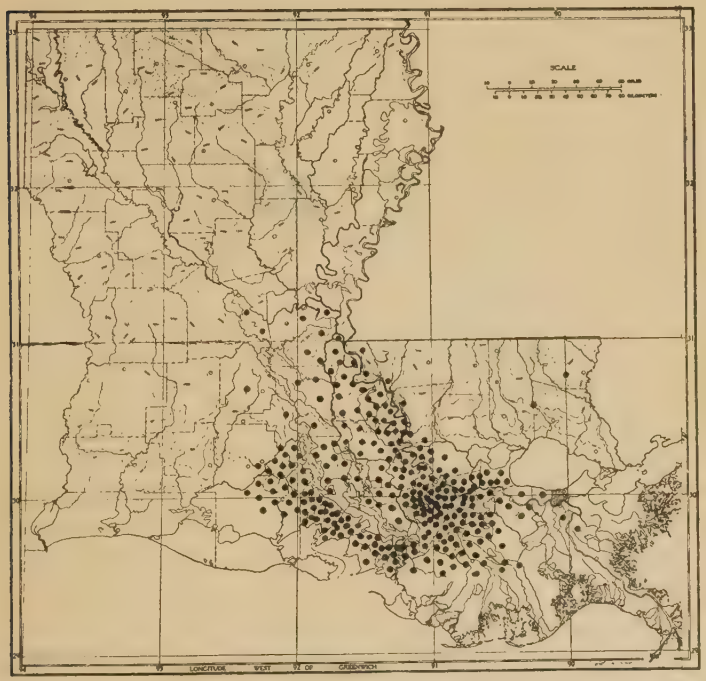

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Figure 13. Sugar cane acreage in 1924. Each dot represents 1000 acres.

which can be produced with small teams and light labor, cane is grown generally on large plantations.

In 1924 the amount of land given to cane culture in the cane belt was 295,305 acres, and in the entire state 301,105 acres. Although this acreage is small when compared with the acreages of cotton or corn, the total farm value of the cane crop is an important item of wealth. In 1925 the total yield of cane in the state was 3,746,253 tons. About 94 per cent of this yield was crushed and produced 395,055,332 pounds of sugar. The value of the cane crop, according to the State Department of Agriculture, has in recent years usually ranged between $20,000,000 and $30,000,000.

Corn. Corn is grown in every parish of the state and is an important crop in forty-three parishes. In these the acreage ranges from 10,000 to 70,000 acres. For 1924 the largest yields per acre were reported from Jefferson, Lafourche, Plaquemines, Pointe Coupée, St. Charles, St. James, St. John, St. Landry, Terrebonne, and West Feliciana. Corn is the most extensively planted feed crop in Louisiana. In 1924 the number of acres in corn amounted to 80 per cent of the cotton acreage; in 1919 the corn acreage exceeded that of cotton by 12 per cent and in 1909 by 67 per cent. The price and yield of cotton during any year control in large measure the acreage in corn the year following.

The amount of corn produced annually in Louisiana and the values of the crops are highly variable quantities. The acreage as affected by the financial profits of the cotton crop of the preceding year and the type of growing season determine in large measure the size of the crop.

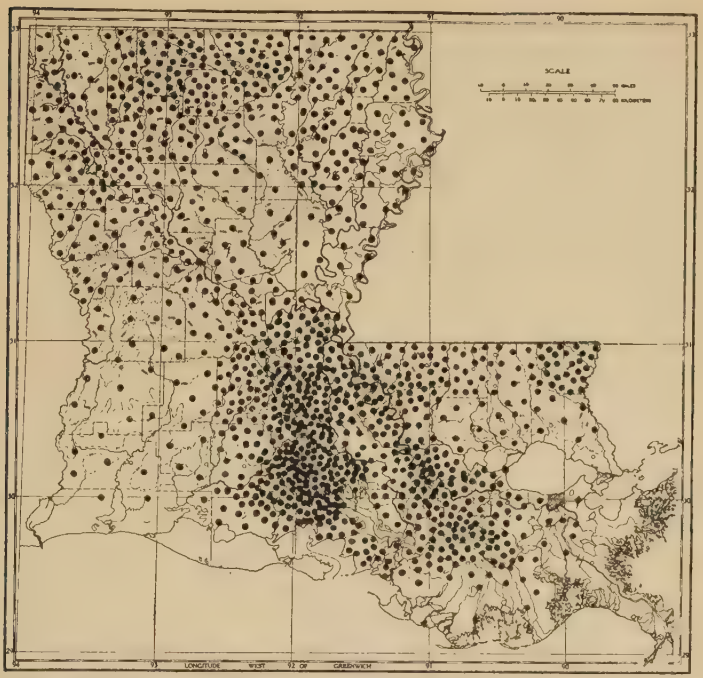

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Figure 14. Corn acreage in 1924. Each dot represents 1000 acres.

The largest corn crop of the state on record was that of 1915, which amounted to 45,100,000 bushels, produced on 2,200,000 acres and valued at $28,864,000. In 1917 the crop was 32,400,000 bushels, grown on 1,800,000 acres, and, partly on account of war prices, valued at more than $47,000,000. Generally, however, not more than 1,250,000 acres of land are planted to corn, and the value of the crop is $20,000,000 or less.

Rice. Although rice is grown in about thirty parishes, its production in Louisiana is largely confined to the southern part of the state in the area west of the Mississipp River. The parishes leading in production are Acadia, Jefferson Davis, Vermilion, Calcasieu, Evangeline, Iberia, Iberville, St. Martin, Allen, St. Landry, Ascension, and St. James. As rice is an irrigated crop, it has to be grown on fairly level land having a rather impervious subsoil. Soil conditions favorable to rice growing are therefore found chiefly in the upland prairies of southern and southwest Louisiana and in the alluvial areas along the Mississippi River.

In 1920 rice was grown on 700,000 acres of land, but, on account of low market prices in recent years, the land planted to rice now approximates only 500,000 acres. The largest percentages of crop acreage in rice are: in Jefferson Davis parish, 82 per cent; Calcasieu, 76 per cent; Acadia, 57 per cent; and Vermilion, 52 per cent. The highest value ever attained by a Louisiana rice crop was in 1919, when it amounted to $53,420,000. The largest crop on record is 25,200,000 bushels, produced in 1920. During the five-year period between 1921 and 1925, the production ranged from 15,000,000 to 20,000,000 bushels, and the market value from $14,861,000 to $22,927,000. In 1924 Louisiana produced 46 per cent of the country's output of rice. It invariably leads in rice production in the United States (Appendix, Table 21).

Rice is one of the world's chief foods. It is easily milled for market, is readily prepared for the table, and is an excellent substitute for wheat bread. From it a large variety of dishes are prepared which are highly palatable

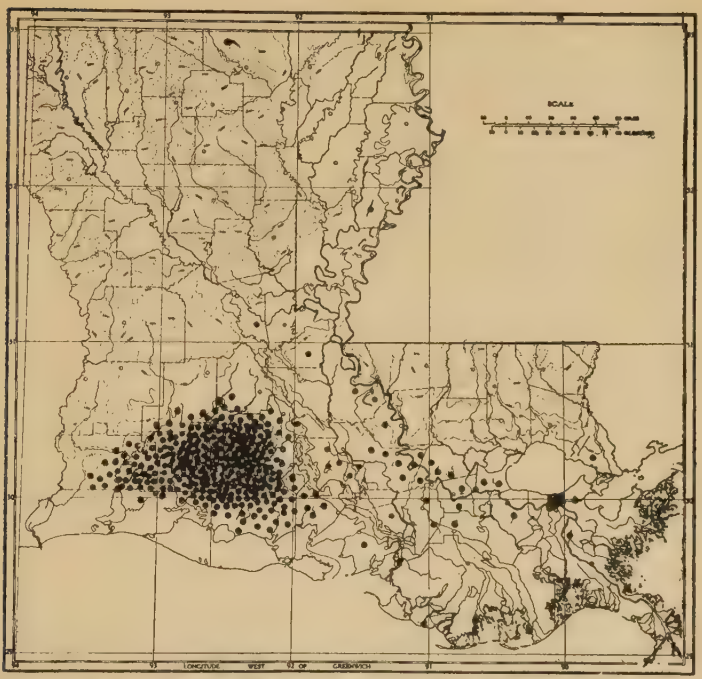

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Figure 15. Rice acreage in 1924. Each dot represents 1000 acres.

and nourishing. As the use of rice for human consumption increases, the demands of the American market will enlarge, and the rice industry of Louisiana will develop to unprecedented proportions (Appendix, Table 18).

Other Farm Crops

Strawberries are grown for market chiefly in the Florida parishes, including particularly Tangipahoa, St. Helena,

Livingston, and St. Tammany. For home consumption and the local market, berries are produced widely over the state, chiefly on cut-over pine land.

There is a ready market for the early Louisiana strawberry crop. From Hammond and other points on the main lines of the Illinois Central Railway, the crop goes to Chicago and other northern cities. Coöperative marketing associations have protected the interests of the strawberry farmer and have been potent factors in the development of this industry. In 1927 the proceeds of the strawberry crop exceeded $6,000,000.

Sweet potatoes are extensively cultivated in the state, being produced to a greater or less extent in nearly every parish. The growing popularity of the Louisiana yellow yam and improved methods of curing it have resulted in a rapid increase of the sweet potato acreage, now approximately 90,000 acres. Sandy loam lands produce the best potato and the largest crops; hence the largest production of sweet potatoes is found in the hill and pine-flat parishes of the state. The value of the 1925 crop was $6,624,000.

White, or Irish, potatoes are likewise extensively grown for home consumption and for the general market. Early potatoes in great quantities are produced in Terrebonne, Lafourche, and other south Louisiana parishes and are proving a highly profitable crop. Many other regions of Louisiana, however, also grow early potatoes for the market. The area planted to Irish potatoes is about 30,000 acres. The 1925 crop yielded 1,800,000 bushels, with a value of $3,780,000.

Hay grows well in practically every parish of the state. A productive soil, long hours of sunshine, a mild climate,

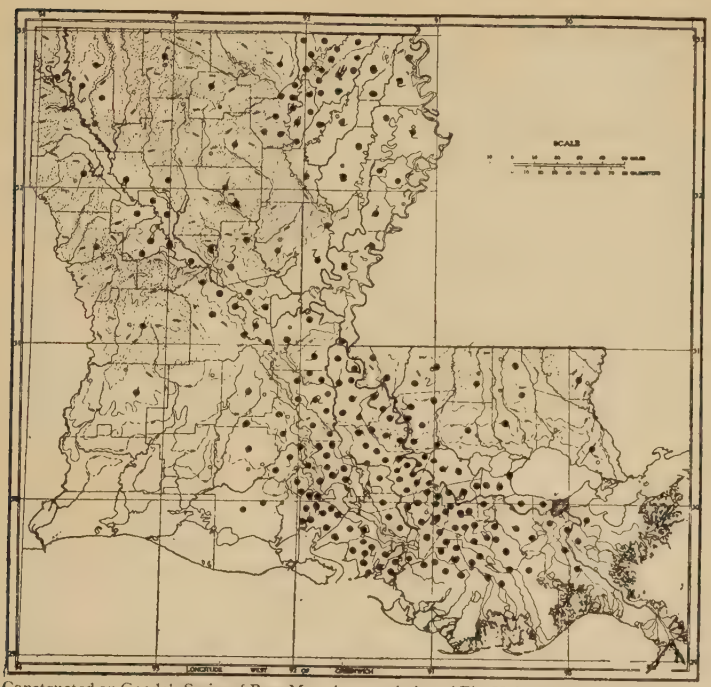

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Figure 16. Hay acreage in 1924. Each dot represents 1000 acres.

and abundant rainfall combine to insure a steady development of the hay industry. In 1925 cultivated varieties of hay were produced on 260,000 acres, and wild hay was cut from an additional 18,000 acres. The chief hay crops of Louisiana are the legumes (cowpeas, velvet beans, soy beans, alfalfa, Lespedeza, peanuts, and white and other clovers), Bermuda and other grasses, and the *paille-fine* of the marshes along the Gulf coast. The value of the

annual hay crop of the state is between $4,000,000 and $5,000,000.

Tobacco is a minor crop of the state. While it has been and can be grown throughout the state, its profitable production is restricted to a few hundred acres in St. James Parish, where the famous perique tobacco is grown. This tobacco is one of the choicest grades on the American market. It is highly prized because of its rich flavor and is used chiefly as a seasoner for mixtures of smoking tobacco. Perique is cured in its own juice by a distinctive process, is very dark in color, and has an aroma different from that of any other tobacco. Because of the fancy prices which it commands, Louisiana's tobacco crop ranks high in value per acre.

Truck growing in Louisiana is in its infancy. Excepting the strawberry and potato, which have attained the proportion of general crops, the vegetable crop of Louisiana is confined to a few regions. Trucking has attained considerable importance in the parishes contiguous to Orleans and in the vicinity of other Louisiana cities, where delivery is made in wagons and motor trucks. The shipment of truck to cities in other states is, however, growing year by year, as is shown by the following statement of carload shipments. The total shipment of truck crops, other than strawberries and potatoes, from the entire state was 2895 cars in 1923, 2584 cars in 1924, and 4666 cars in 1925.

The Bee Industry

Among the minor industries of the state perhaps none has made greater progress in recent years than has the keeping of bees. The long growing season of flowering

plants, the abundance of vegetation, and the short and mild winters of the state are the chief factors contributing to the development of the bee industry. There were in 1927 more than 3000 apiaries in the state, and the number of colonies of bees was approximately 110,000. The largest apiaries in the state and the number of their colonies are 3000 in St. Tammany, 1500 in Iberville, 900 in Avoyelles, 800 in Caddo, 700 in Orleans, 700 in St. Martin, and 600 in St. Landry. The best regions for bee and honey production are along the streams, although large and successful apiaries are found throughout the state.

The bee industry in Louisiana is concerned chiefly with the production of honey, for which there is an unfailing market at fair prices. The value of the annual honey and wax crop of the state is now in excess of $750,000. The " package " bee business, which consists in the shipment of live bees (with queens) to northern states, is a phase of the industry rapidly growing in importance. The value of such shipments is estimated at approximately $100,000 annually. Bees are sold by the pound (about 4500 bees) at prices ranging from $2.00 to $3.00. Queen bees retail at 50 cents to $1.00 each, but if they are very valuable they may sell for as much as $10. A Louisiana queen bee shipped to North Dakota was resold into Alabama for $300. It is probable that Louisiana will within a few years have more large bee shippers than all the rest of the South combined.

In its relationship to agriculture the honey bee is of the greatest importance. Many plants absolutely require the visits of bees or other insects to disturb their pollen and thus fertilize them. It has been shown by experiment

that twenty heads of white clover visited by bees produced an average of twenty-seven seed per head; while twenty heads of clover so protected that bees could not visit them produced not one seed. Clover can produce only an occasional seed from self-pollination; the pollen must come from some other clover plant in order to effect fertilization. It is very evident, therefore, that the indirect value of bees is worthy of attention.

Fruits and Nuts

Citrus fruits. The citrus fruits of commerce comprise chiefly the orange, lemon, grapefruit, and lime. Like many other crops, they grow on a wide variety of soils but are limited in range by climatic conditions and do not extend into regions of severe frost.

Of these fruits the only one reported for Louisiana in the latest statistics on agriculture compiled by the United States Government is the orange, with an estimated yield of 75,000 boxes in 1924 and 100,000 boxes in 1925. The chief orange groves are situated along the Mississippi River south of New Orleans, although there are many fine groves throughout the Gulf coast parishes.

The oranges grown in this section are the most luscious citrus fruits produced in America. Because of their thin skins and abundance of sweet juice, people of discriminating taste prefer the "Louisiana Sweets" to the oranges of other sections.

Groves of the Satsuma orange (which withstands greater cold) are being planted in increasing numbers in Livingston, Tangipahoa, St. Tammany, St. Helena, and Wash-

ington parishes in the eastern section, and as far north as Rapides and Vernon.

Figs. Figs are grown in all parts of the state, but more extensively for commercial purposes along the Gulf coast, where the industry is developing rapidly As the fig will not stand long-distance shipping, it is being marketed in the form of preserves, a delicacy for which there is now a great demand. The Magnolia fig is preferred for this purpose, and the Brunswick is another favored variety. There is probably no fresh fruit superior to the Celeste fig when plucked ripe from the tree. According to the census report, the amount harvested in the state during 1919 was 1,351,000 pounds.

Orchard fruits. While peaches, plums, pears, apples, and grapes are grown in different sections of the state, their production cannot be classed as an important industry. Though peaches and apples are not raised on a commercial scale, the peach crop of 1925 was valued at $550,000 and that of the apple at $56,000. Pears and grapes, however, were grown for commercial purposes with the approximate value in 1924 of $124,000 and $6500, respectively.

Pecans. Pecan production is one of the most rapidly growing horticultural industries in Louisiana, the increase in acreage at five-year intervals during the last twenty-five years being 100 per cent. One of the largest pecan groves in Louisiana is in Allen Parish and contains 1000 acres in trees. Large orchards, each with 500 acres or more, are found in Bossier, Red River, and Iberia parishes. The total production in 1926 was 3,000,000 pounds, valued at $600,000. The total pecan acreage in 1927 was approxi-

A Pecan Grove near Shreveport

mately 20,000 acres, with 200,000 producing trees. Louisiana ranks fourth among the thirteen pecan-producing states, being exceeded only by Texas, Oklahoma, and Georgia in the order named. A pecan experiment station which is being established at Shreveport by the United States Department of Agriculture will assist materially in the development of the pecan industry of Louisiana and adjoining states.

Of all nuts, the pecan is the most savory and one of the most nutritious. It grows on a large deciduous tree in which is combined symmetry and beauty of foliage. Planted in groves with proper and exact distance between

trees, the pecan adds a distinctive charm to our landscape. This is very fitting since Louisiana is one of the few states in which the pecan is native. It was in Louisiana that the early explorers first discovered the pecan, and it was in Louisiana that this tree was first successfully grafted. In Louisiana, too, is the largest pecan tree on record. The trunk measures 20 feet in circumference at waist height and the branches have a spread of 132 feet. This tree is located about thirty-two miles south of Baton Rouge.

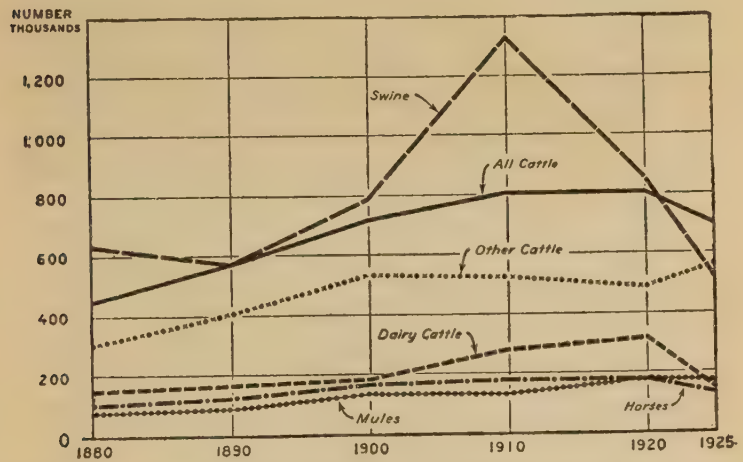

Figure 17. Number of live stock in Louisiana, January 1, 1880–1925

Animal Industries

Live stock. Live-stock production does not occupy a very prominent position among the farm enterprises of the state at the present time. The one-crop type of agri-

Beef Cattle

culture prevalent in Louisiana in years past was not conducive to the raising of live stock. In ante-bellum days, each planter took great pride in his stable of fine horses, but since the adoption of share and day labor, the small farmer of later years has devoted little or no attention to the development of live stock. When railroads opened up the lumber districts of the state, many farmers neglected their farms to work in the mills, thus further retarding the development of the live-stock industry. The kinds of live stock raised include beef and dairy cattle, horses, mules, hogs, sheep, and goats (Appendix, Table 20).

Cattle. The introduction of pure-bred stock in the last ten years has given a decided impetus to the live-stock industry. Between 1916 and 1918 many head, of both dairy and beef breeds, were imported from northern live-stock-producing areas; the period between 1918 and 1922 saw even greater numbers of well-bred cattle brought into Louisiana, those of the beef breeds numbering 3265; those of the dairy breeds 5657; a total of 8922 head. As evidence of the results already effected by this improved stock, excellent herds of beef cattle are found in East Baton Rouge, Vermilion, Calcasieu, East Feliciana, Evangeline, and St. Landry parishes, and there are among the dairy breeds many cows producing more than one and one half pounds of butter fat daily.

Dairying. The cows on test, comprising herds picked at random, produced an average of 4554 pounds of milk and 215 pounds of fat, showing that high production is possible in Louisiana. In 1921 there were 187 farmers in Louisiana shipping cream to one creamery for the manufacture of butter. At this time (1929) there are more

than 10,000 farmers shipping cream to 16 creameries throughout the state. There are also 11 cream stations where the cream is bought and then shipped to the creameries. In addition to the creameries there are two milk-condensing plants and a cheese factory. At the present time, Louisiana, through her natural advantages for dairying, is building on a safe and sound foundation. She probably leads the United States in the total number of organized coöperative sire associations. (This is an association in which farmers dispose of their scrub sires and band together in buying a few pure-bred sires. These are exchanged in numerical order as their period of usefulness is terminated in one community.) Pennsylvania

GROWTH OF DAIRYING IN LOUISIANA

(Cows and heifers two years and older kept for milk during the years 1926–1928)

	1926	1927	1928
Estimated Number of Registered Cows	4,000	6,000	8,000
Number of Grade Cows	126,000	172,000	204,000
Total	130,000	178,000	212,000
Marketing and dairy products			
Total pounds of butter produced	500,000	1,057,000	1,250,000
Total pounds of whole milk	121,666,000	155,000,000	182,250,000
Total pounds of American and cottage cheese	169,000	200,000	250,000
Total pounds of condensed milk	131,000	3,000,000	4,500,000
Total gallons of ice cream		1,156,455	1,156,455
Value	$6,500,000	$8,900,000	$10,600,000

led the United States in 1927 with 51 associations. Louisiana had 53 in 1928. The effects of these better sires and better feeding have raised the average production per cow in Louisiana from 1354 pounds of milk in 1922 to 1978 pounds in 1928.

The largest dairy sections in Louisiana at the present time are probably East Baton Rouge and Caddo parishes, which supply whole milk to the larger cities, New Orleans,

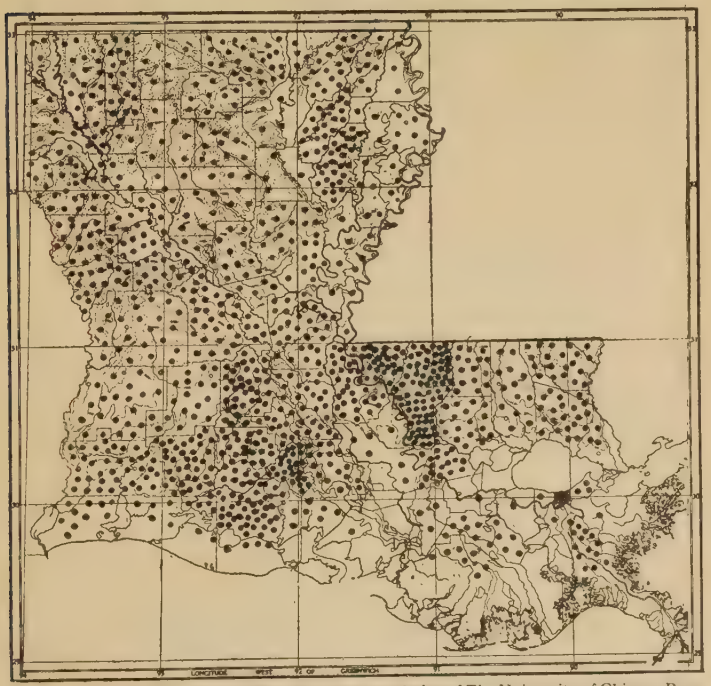

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Figure 18. Beef cattle in 1925. Each dot represents 500 head.

Baton Rouge, and Shreveport. There is, also, a large producing area in Tangipahoa and the Feliciana parishes. Creameries for the production of butter are located in Caddo, Webster, Lincoln, Ouachita, Rapides, Calcasieu, Acadia, Lafayette, Iberia, Ascension, East Baton Rouge, and Tangipahoa. East Baton Rouge has a cheese factory, and Tangipahoa and Orleans parishes have condensing plants.

While dairying is still in its infancy in Louisiana, it is

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Figure 19. Dairy cattle in 1925. Each dot represents 500 head.

EIGHT OF A LITTER OF ELEVEN HOGS

The 1928 champion "ton litter" of eleven hogs weighed 3177 pounds when 180 days old and sold at a profit of $140, besides premiums won at state and parish fairs.

making rapid strides and will before long be one of the major sources of income on farms in Louisiana.

Horses and mules. The raising of horses and mules is an old industry in Louisiana; stock as sound and as fully pedigreed as those of any other part of the Union are raised in the state. In value of horses the leading parishes are St. Landry, Avoyelles, Evangeline, Acadia, Lafayette, and Natchitoches; in value of mules, Lafourche, Vermilion, Lafayette, Natchitoches, and several other cotton parishes. In 1920 there were in the state 178,756 horses valued at $15,709,070 and 180,115 mules valued at $28,348,039. In 1925 the number of horses had decreased to 131,748 and the number of mules to 173,643.

Hogs. Figure 17 on page 149 shows a sharp decline in the number of hogs in Louisiana in the census years

1910 and 1925, there being only 62 per cent as many in 1925 as in 1920. This decrease might appear alarming were it not for a decided improvement in the quality of the later production. With the inferior swamp variety of hog (the razor-back) almost exterminated and pure-bred stock replacing it, Louisiana is, on the whole, probably in better condition than ever before concerning hogs. The Boys' Pig Clubs are responsible to a great degree for improved conditions.

According to the United States census of 1920, there were in the state 850,562 hogs, valued at $7,541,443. In 1925 there were 527,954 head. Hog raising is an important industry in St. Landry, Natchitoches, Evangeline, and Washington parishes.

Sheep. In Louisiana little special attention is given to the raising of sheep for either wool or meat. Since sheep raising is essentially a range proposition it is of very minor importance in our state. Beauregard, St. Tammany, Tangipahoa, and Calcasieu parishes lead in this industry.

The number of sheep in the state, according to the United States census of 1920, was 129,816, with a value of $672,159. The amount of shorn wool was 344,514 pounds, valued at $175,770.

Goats. The number of goats in the state in 1920 was 91,249, valued at $229,940. They are raised more extensively in Rapides, Vernon, and Natchitoches parishes.

Poultry. Very little attention is given to poultry raising on the general farms in Louisiana. However, some farmers, taking advantage of good local markets, have added considerably to their incomes through supplying local demand. Great progress is being made in develop-

ing this industry, due materially to club activities; there are more than six thousand boys and girls enrolled in Poultry Club work.

Since 1919, when one thousand pens of high-grade stock were introduced into the state, there has been an extraordinary increase in pure-bred poultry. Through forty-two coöperative associations, poultry and eggs are being shipped from different points.

Some farms specialize in egg production; others are more interested in raising fryers. The hatching of baby chicks in huge incubators, apart from the smaller-sized home incubator, is another phase of the industry. The egg production of 1920 was 11,832,290 dozen; the value of both chickens and eggs, $7,058,664.

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CHAPTER VIII

LUMBERING AND ALLIED INDUSTRIES

Lumbering. From the standpoint of the number of people engaged in the industry and of the value of the products, lumbering ranks among the foremost industries in Louisiana. For years the state ranked second among all states in the Union in the production of lumber; then assumed first place in 1914 only to drop back to second the following year (Appendix, Table 22). Since 1920 Louisiana has ranked third, contributing about 9 per cent of the total production. In 1923 the output was valued at $121,332,537.

Our original virgin forests are being so rapidly cleared that, at the present rate of cutting, they would not last more than ten years. Many sawmills will have exhausted their timber supply in from one to five years; a few mills have a thirty-year or more cut. Some companies, by readjustment of present milling practice and by reforestation, are looking forward to a continuous cut. To supplement the stand of virgin pine until the second-growth timber is old enough to cut, the Bogalusa mill is sawing redwood brought from the Pacific coast. Pine lumber production now exceeds the growth of timber by about three times. Not so great a per cent of the original stand of hardwood and cypress has been cut; therefore the mills depending upon the latter trees will fare better than the pine mills.

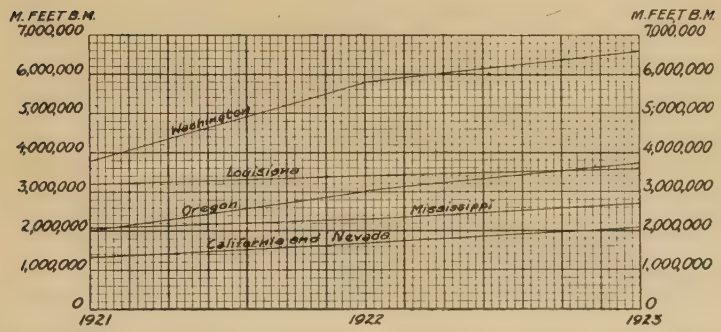


Figure 20. Production of lumber by states, 1921, 1922, and 1923

State	No. of Active Mills Reporting			Quantity (M Feet B M)			Per Cent of Total Production in U. S.		
	1923	1922	1921	1923	1922	1921	1923	1922	1921
Washington .	490	519	546	6,677,656	5,836,277	3,831,800	18.0	18.5	14.2
Oregon . . .	459	464	389	3,966,083	3,023,768	2,022,219	10.7	9.6	7.5
Louisiana . .	310	282	341	3,554,212	3,386,000	3,215,110	9.6	10.7	11.9
Mississippi . .	785	715	919	2,690,976	2,267,695	2,081,520	7.2	7.2	7.7
California and Nevada . .	214	222	237	2,118,094	1,720,556	1,350,438	5.7	5.4	5.0
United States .	14,300	13,166	15,716	37,165,505	31,568,888	26,960,864	100.0	100.0	100.0

It is interesting to note the variety of species that enter into Louisiana's timber production. The list with so many of the commercially valuable woods tells in an illuminating manner the possibilities of Louisiana's forest lands. The state leads all other states in the Union in the production of lumber from the following species: yellow pine, cypress, red gum, tupelo, ash, magnolia, and pecan.

According to the United States census report of 1919, there were 511 enterprises in Louisiana in which 45,107 persons were engaged in producing lumber and timber

products. This is exclusive of those engaged in allied industries (Appendix, Table 23).

Wood in the log is used for posts, telegraph poles, railway ties, and bridge timber, or it is split into shingles and fencing. Small trees, tops of trees cut for lumber, and waste from the sawmill are used in pulp making.

Lumber is the product of the sawmill after the trees of the forest have been cut into logs and carried to the mill. Used in this sense, *lumber* refers to the finished product. According to dimensions it is known by different names, as beams, scantling, boards, and laths, all of which are used in rough construction. Some lumber is sent to the planing mill and there surfaced, edged, and dimensioned for exterior and interior finishing. It is also made into articles like boxes, crates, barrels, implements, and wagon stock, and into furniture. When considered from the standpoint of material consumed by these allied industries, lumber is classed as a raw product.

Most sawmills have two centers of activity: (1) a mill site where the logs are converted into lumber and (2) a "front" or camp in the forest where the trees are felled, trimmed, and cut into logs. When tracts of timber are widely separated, the mill proper is often moved from one site to another as the forests are cleared.

In the woods skilled axmen determine the exact line upon which they wish a tree to fall. If it be a pine it is notched about one foot above the ground and sawed on the opposite side of the trunk. Cypress and hardwoods are cut higher because of the "swell" near the roots. In the better logging practice, it is customary to leave standing one or more large pine trees per acre as well as

all trees under ten inches in diameter. The object is to re-seed the tract.

After a tree has been felled, the branches are cleared off and the tree measured and cut into logs. The pine log supply is handled by railroads. The log road consists of a permanent main line and spurs which are projected into the forest. The spurs are moved from time to time as the timber is taken out. At right angles to the logging spurs there are clean-cut skidding roads. Teams bunch the logs in the skidding lanes, and a steam skidder operated on the railroad track pulls the logs to the railroad line, where they are picked up by a steam loader and placed on flat cars.

Our state laws require that logging engines be equipped with spark arresters to prevent forest fires. An inspector is employed to see that this law is not violated.

Some pine and a great deal of our hardwood are conveyed to the mill on motor trucks. Cypress, however, is handled quite differently. The same method is employed in felling the trees and cutting them into logs; but, since cypress swamps are usually covered with water one or more feet deep, the logs are removed by means of an overhead skidder. There are two essential parts to such skidders: (1) an overhead line thirty or forty feet above ground and (2) a carriage, or bicycle, which runs back and forth on the overhead line. The overhead line, a very strong steel cable, extends from the bank, where it is securely fastened to a large tree, into the swamp nine hundred or a thousand feet, where the other end is fastened to another tree. The bicycle is fitted with two smaller steel cables called the pull line and the re-haul line.

Hardwood Logs Waiting to Be Transported to the Mill by Motor Trucks

To the pull line are attached tongs which clasp the logs while they are being pulled to the shore. The re-haul line carries the bicycle back to the far end of the overhead line in order that another log may be brought to shore.

All slack must be taken out of the overhead line. This is done by machinery. Machines also operate two drums which wind and unwind the pull line and the re-haul line. These drums revolve simultaneously but in reverse order — one winding the pull line, the other unwinding the re-haul line.

In wide stretches of cypress it is necessary to work the timber from both sides of the swamp. Or, in some sections where a natural waterway runs through the timber, it is customary to operate an overhead skidder from a flat-bottomed boat instead of from the shore. In the absence of a natural stream a canal may be dredged down the center. In such cases the logs are pulled to the boat and placed on barges by a steam hoist. A tugboat tows the barges to the mills.

At the mill, logs are handled in different ways. One common practice, especially with pine, is to allow the logs to float in the mill pond until guided to a " log-slip " or runway, where a continually moving cable snatches the logs from the water and conveys them to a carriage which takes them to the saw.

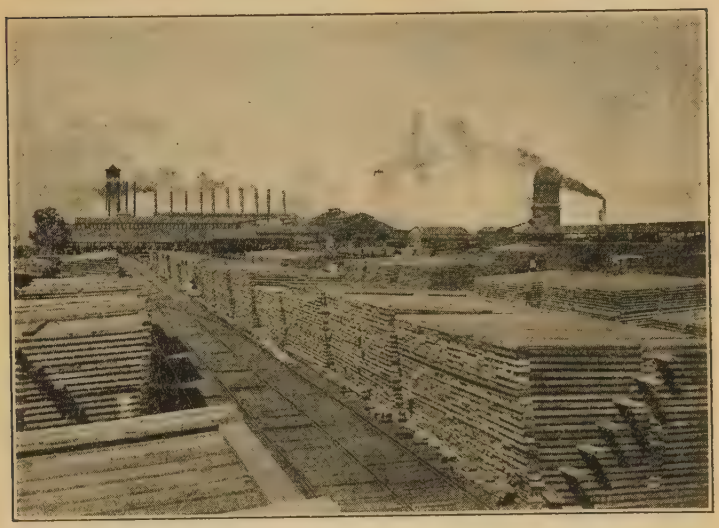
Our large mills have a number of band saws mounted in " gangs " so that the whole log is sawed into boards with one forward movement of the log carriage. The band saws are so mounted, on one wheel above and one wheel below the saw pit, that each saw makes a continuous band. Circular saws are used for trimming boards and

for similar minor operations. The bark-covered slabs and the trim from the edges of the boards and planks are worked up into laths, shingles, and similar products.

Every part of the log, from lumber to sawdust, is used and waste is not tolerated in our best mills. Such mills cut the felled trees into logs to a six-inch top and use the tree tops and limbs to a three-inch limit as pulp wood. Thus only small branches remain in the forest and these are scattered and allowed to decay. Sawdust is removed from under the saw by air suction. It has been the custom to burn this fuel in the engine room, but it is now becoming the practice to distill sawdust to make wood alcohol and then use the sawdust in paper mills.

Some sawmills make rough lumber and stop at that point. Others operate planing mills also, making smooth-faced boards, moldings, and like products. The Great Southern Lumber Company of Bogalusa has, in connection with its sawmill which has a daily capacity of one million board feet, a paper mill, paper bag factory, box factory, lath and broom handle factory, turpentine still, wood-treating plant, by-product plant, and other wood-using plants. This was considered the largest mill in the Union, if not in the entire world, until recently when the Long-Bell Company moved from Louisiana to Washington and erected a mill as large as, perhaps larger than, the one at Bogalusa.

Lumber as it comes from the saw is green, or wet, and must be dried before it is shipped to market. This is done by stacking it in the lumber yard so that every piece may be air dried; or it may be dried by putting it through a steam kiln.



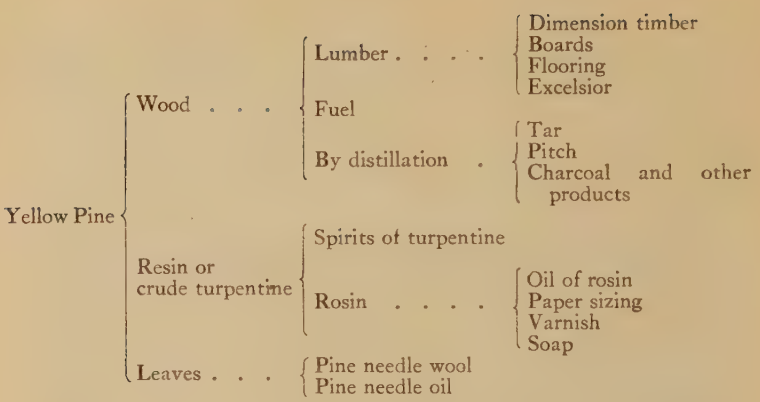
A Pine Lumber Yard, Bogalusa

If lumber is to be used for furniture or interior finish in buildings, its beauty is an important item. Wood for such purposes is " quarter-sawed " so as to show more of the edge grain.

The wood, the sap, and the leaves of our pine trees are used for commercial purposes. The table on page 166, reproduced from Toothaker's *Commercial Raw Materials*,[1] will give some idea of the many ways in which our yellow pine is used.

Turpentine, rosin, tar. By tapping the trees a crude semifluid, sticky resin, or crude turpentine, is secured. Usually a wide strip of bark on one side of the tree is

[1] Toothaker, Charles R. *Commercial Raw Materials*, p. 32. Used by permission of Ginn and Company.



removed. The wound thus made discharges a fluid which is caught in vessels hung on the trees. The crude turpentine consists of a resin dissolved in a volatile oil.

The crude turpentine is placed with water in a still and heated. The steam carries off the volatile oil with it, and the distillate which is left is allowed to cool in a vat. When the steam cools, the water and oil separate and the latter is drawn off into barrels for market. It is known as spirits of turpentine or oil of turpentine, and is largely used for dissolving resins for varnishes and for mixing paints. It is also used in medicine and in liniments.

The residue remaining in the still is a solid substance of amber or blackish-brown color known as rosin. It is used in making varnishes, laundry soap, and sealing wax. It is also used for sizing paper and in ship calking. When rosin is heated in a retort it decomposes into certain gases, liquids, and pitch — all of which have important uses. The products from the pine sap are called naval stores.

Felling a Tree That Has Been Tapped for Turpentine

PRODUCTION OF NAVAL STORES IN 1924[1]

PRODUCE	UNIT	AMOUNT
Crude Gum	Barrels	212,873
Turpentine	Gallons	2,128,730
Rosin	Pounds	57,816,375

Estimated pulpwood production, 1925, 210,000 cords.

From the pine needles are made pine needle oil, used medicinally, and pine needle wool, used for stuffing mattresses and pillows, and for making mats and rugs. Pine oil has great antiseptic and germicidal strength. It is used for coughs, colds, skin diseases, and many other ailments.

Distillation of wood. When wood is heated in a retort various gases are driven off. Some of these gases when passed through cooled pipes condense into a liquid. Charcoal is left in the retort. This process is called distillation. Oak, birch, and pine are the kinds of wood usually distilled. By redistillation and treatment with chemicals many substances are obtained. In 1924 there were marketed 146,600 tons of charcoal produced from pine trees and valued at $2,000,000.

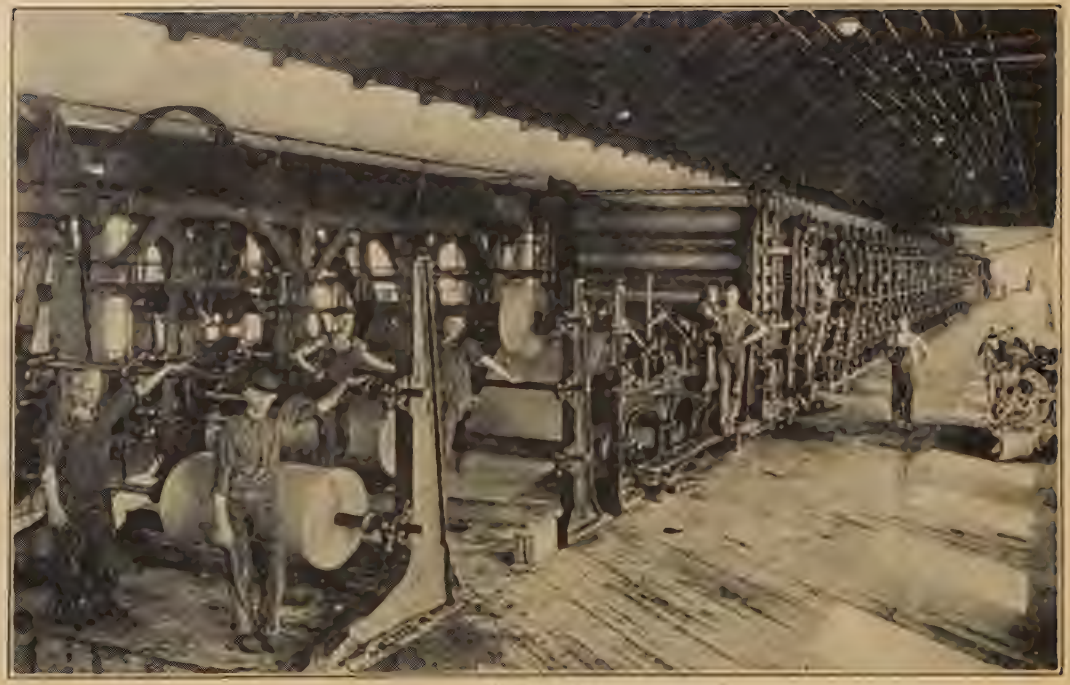
Paper pulp. One of the most important of our forest industries to both state and nation is the making of paper pulp. In making wood pulp in Louisiana, small trees and tops of larger trees felled for lumber are cut into small lengths and placed in a "digester," where they are cooked in a chemical solution. When the "cook" is complete the wood goes through a process of washing and beating before being converted into paper. To produce white

[1] From the State Department of Conservation.

paper the pulp has to undergo a bleaching process. Louisiana manufactures only unbleached paper. The state has a large acreage in small pine trees suitable for pulp manufacture; the short-leaf pine lands of north Louisiana are estimated to have more than fifteen million cords.

Southern yellow pine was first used for paper making in 1908; since that time the industry has grown very rapidly. Louisiana produces pulp, container board, and kraft wrapping paper. Plants are being established at different points in many sections of the state. The chief paper and pulp mills in Louisiana are at Bogalusa, Bastrop, West Monroe, and Hodge; but many other localities offer conditions favorable to the establishment of this industry.

Pulp (or cellulose) is used not only for paper making but as the raw material for a large number of valuable commodities. Next to paper making, rayon production probably consumes the largest amount of cellulose. Since the discovery of rayon as a separate and distinct textile fiber like cotton, wool, hemp, or silk, its popularity has spread very rapidly. Among other products made from cellulose are smokeless powder, dynamite, collodion, insulating material for electrical apparatus, and leather substitutes. These industries will look to Louisiana more and more for their raw material because the pulp industry of the north is fast decreasing. There is no doubt that on account of the favorable conditions surrounding the industry in Louisiana, this state will annually increase its contribution of raw cellulose for manufacturing purposes.



Paper Mill

A paper mill, with its grinding machines, digesting tanks, and other machinery, is too expensive to move from tract to tract after the manner of sawmills; therefore, a paper company must be sure of its wood supply. To meet permanently the increasing requirement for pulp wood necessitates the systematic production of wood as a crop. Louisiana is a leader in matters of forestry and conservation, and the forest taxation law is considered a pattern which other states might well emulate. Lumber companies which operate pulp mills have gone into reforestation on an extensive scale. Those who are establishing paper mills acquire ownership of large tracts of land to insure a pulp wood supply, and are buying wood from farmers who are clearing land for agricultural purposes.

The climate of Louisiana favors a much quicker growth of young trees than does the climate of the north. Since work in the forests can be carried on during both winter and summer and since excellent means of transportation make pulp wood quickly available, it is not necessary to store a large supply of wood at the mill. Gas, oil, or electric power is available at moderate cost. The chemicals required for the pulping operation are produced from natural Louisiana products. These and other reasons have caused Northern capital to enter Louisiana.

Mill work. The manufacture of logs into lumber is naturally located in or near the timber supply, but the further manufacture of such articles as boxes, barrels, doors, window frames, sashes, and blinds clings to centers where building operations and other industries are found. Rough lumber is easily moved and stored, but dressed

planks, moldings, and special interior woodwork are likely to be injured in moving; hence these are manufactured in the centers of consumption. All our leading towns have such plants.

Furniture making. Another important use for lumber, especially hardwood, is furniture making. Since the tendency in manufacturing in our country is to locate each industry near the source of its raw material, there is every reason to believe that furniture making will develop into a large industry in Louisiana. In this connection mention should be made of the fact that New Orleans, on account of its proximity to tropical countries, imports large quantities of mahogany, which is used in the manufacture of millwork and furniture of beautiful design. For the making of wickerwork furniture and basketry Louisiana offers an abundant supply of "reeds," rattan, and willow shoots. The United States census report for 1919 gives seventeen establishments in Louisiana producing furniture valued at approximately two million dollars. One of the large furniture factories of the country is located in New Orleans.

Toys. Another industry associated with lumbering is the manufacture of toys. New Orleans possessed two toy factories until recently, when one was moved to Morgan City so that it would be near the sawmill from which it secures raw material. This factory makes tupelo lumber into toys and children's furniture.

Wood preserving. A number of creosoting or wood-preserving plants widely distributed throughout the state employ several hundred persons Railroad ties, telephone poles, fence posts, bridge timbers, and other timber prod-

ucts are treated to prevent decay. The output according to the 1919 census report was valued at $1,740,000.

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CHAPTER IX

MINING, FISHING, AND TRAPPING

Mining

Petroleum. The petroleum industry includes: (1) the production and transportation of the crude oil, (2) the separation of the crude oil by fractional distillation and other methods into a variety of products, and (3) the distribution of these products.

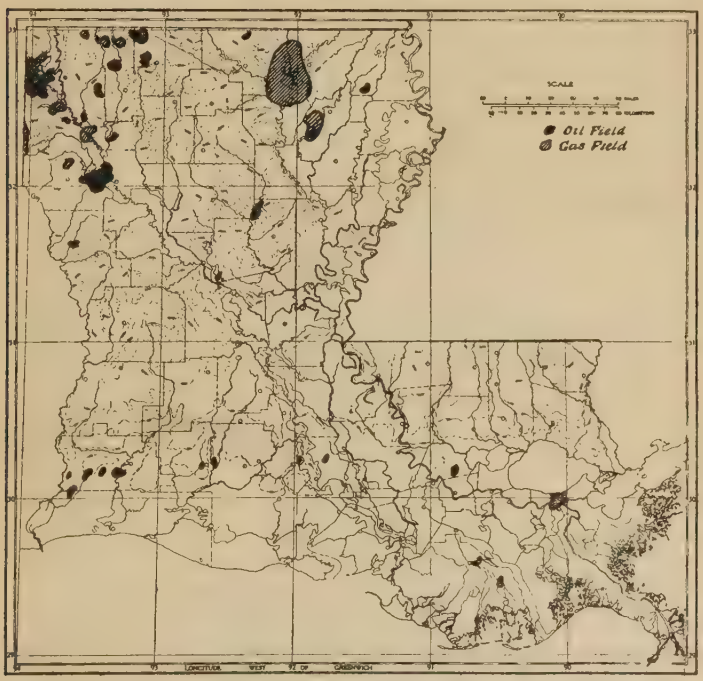
Like lumbering, this industry has two separate and distinct sites of activity, one in the field and the other in or near cities or towns, preferably seaports for ease in distribution.

Based upon the magnitude of their current production, the oil-producing states of the Union fall into three groups. Oklahoma, California, and Texas, each producing more than one hundred million barrels annually, surpass other states. Louisiana belongs to the second group, producing about thirty-five million barrels annually. It is estimated that 351,605,000 barrels have been produced in the state, with a money value of about $440,000,000.

Louisiana has very rapidly advanced to prominence in the petroleum industry. In 1902 the state produced 549,000 barrels of oil; in 1922 the production amounted to 35,376,000 barrels. Between 1909 and 1919 the number of oil and gas wells increased from about 250 to nearly

2500. In the years 1922 to 1925 inclusive the Louisiana Conservation Department issued 5261 drill permits. Test wells are now being drilled in many widely separated parts of the state in the belief that oil underlies the whole state. The decreased production in other fields is one reason why oil capitalists are interested in Louisiana.

Location and boring of wells. Permits were issued to persons in forty parishes but the leading oil and gas fields



Constructed on Goode's Series of Base Maps by permission of The University of Chicago Press.

Figure 21. Map showing oil and gas fields, according to the Minerals Division, Department of Conservation.

Standard Oil Company of Louisiana, Baton Rouge Refinery

are: (1) north Louisiana, from Shreveport to Monroe and eastward as far south as Tullos, (2) southwest Louisiana, and (3) Terrebonne Parish. (For production, see Appendix, Tables 25, 26.)

To bore a well a derrick is erected to support the long, heavy drilling tools; the machinery is operated by an engine placed at or near the foot of the derrick; a heavy drill pipe fitted at the lower end with a perforated bit is rotated so as to grind a hole through the soil or rock while water or thin mud forced down through the drill pipe returns outside. From most wells the oil has to be pumped. Sometimes, however, the pressure is so great that the oil gushes out with such force as to throw it high in the air; a great deal of oil has been lost before the flow could be controlled by placing a cap on the pipe. It is often necessary to construct a pit in the ground to hold the oil until proper storage tanks can be erected.

Storage and transportation. Since petroleum and its products are inflammable substances the problem of handling them is difficult. Iron storage tanks are used in the field; iron pipe lines connect the field with the refinery, and steel tank railway cars and steamers constructed especially for the purpose are used to transport crude oil, gasoline, and other by-products. Every Louisiana city or town of importance has several closed metal tanks filled with gasoline or other petroleum products; from these the contents are distributed to the local dealers.

Oil refining. The by-products of petroleum are many; the processes of refining relatively simple and inexpensive. The type of by-product ranges from highly volatile sub-

stances, like naphtha, through the less volatile, like kerosene and lubricating oil, to wax and pitch.

Petroleum is refined by distillation. The crude oil is placed in huge tanks and gradually heated. The lighter constituents vaporize and pass off into coils of pipe that are surrounded by cold water. This causes the vapor to condense, and the liquid can be drawn from the pipes. After the crude oil in the tank has been raised to a temperature sufficiently high for all volatile substances to have been separated, a thick black residue remains.

There are two types of this residue, one containing much paraffin and one containing much asphaltum. From such residues are made tar for roofing, hard black coke, and the paraffin which we use for sealing jelly glasses and making Christmas candles and chewing gum. By redistillation of the major products many by-products are obtained; these include several grades of oil, vaseline, and other ointments and drugs.

The report of the State Commissioner of Labor lists more than forty oil and refining companies located in different cities in Louisiana, but the Standard Oil Company's plant at Baton Rouge, which has approximately seven thousand employees, ranks first in the number of persons employed and in capital. The refinery receives crude oil from the Mid-continent and Gulf field and from Mexico. The various petroleum products are manufactured and shipped on ocean steamers from Baton Rouge's excellent water frontage.

Natural gas. In 1925 Louisiana produced 156,597,210,000 cubic feet of gas, being exceeded only by Oklahoma, California, and West Virginia. Gas is produced

in the following parishes: Ouachita, Morehouse, Webster, Bossier, Union, Caddo, De Soto, Terrebonne, Red River, Franklin, and Richland, and is supplied to most cities and towns in the state for domestic and industrial purposes.

Gas is characterized as "wet" or "dry" according to its gasoline content. Formerly all natural gas was burned just as it came from the well, but now, wherever justified, its gasoline content is first extracted. The recovery of gasoline from natural gas has assumed large proportions in Louisiana. In 1924 about forty-eight million gallons were recovered.

Gas wells and pipe lines are practically the same as for petroleum. Carried long distances into other states, Louisiana gas is an important factor in the location and development of various industries. (For gas production, see Appendix, Tables 24, 27, 28 and 29.)

Carbon black. The greatest consumption of gas in Louisiana is for the production of carbon black, of which Louisiana has, during the last few years, been producing about two thirds, and in 1924 three fourths, of the national output.

In carbon black manufacture, the gas is first piped to the absorption plants where the gasoline content is recovered, and then run into metal buildings where the flame is brought into contact with steel plates to which the carbon black or soot adheres. This is scraped off and screened or "bolted," then bagged and stored for shipment.

Carbon black is essential to many industries, but its greatest present use is in the manufacture of rubber tires

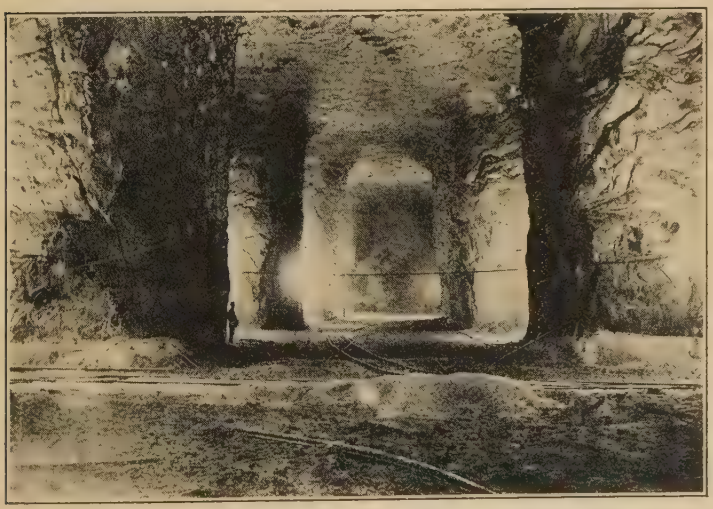
A Carbon Black Plant at Monroe

for automobiles. It is used in printing ink, varnishes, phonograph records, typewriter ribbons, carbon pencils, and insulators. Because of the wasteful use of gas by some of the carbon black manufacturers, the Commissioner of Conservation is demanding a reduction in the amount of gas used for carbon black production (Appendix, Table 31).

Salt. Of the many chemical compounds found in nature which can be utilized in their natural state, the most important is common salt. Meat-packing and fish-curing plants and soap, paper, and glass manufacturers are the great consumers of salt, although smaller quantities are used in curing hides, in freezing mixtures, and in the manufacture of pottery, dyestuffs, fertilizers,

brick, tile, and fire clay products. Salt furnishes directly or indirectly the main bulk of soda required in many of the manufacturing industries of the world. The success of the chemical industries of any country rests largely on a liberal supply of common salt.

Salt seldom occurs pure in nature, being generally mixed with other compounds which must be separated to secure pure salt. Louisiana, however, has vast deposits of 99.9 per cent pure salt. Although deposits have been located in many sections of the state when drilling for oil or water, salt mining is confined chiefly to Avery and Weeks Islands, where borings over two thousand feet deep failed to reach the bottom of pure rock salt.



A Salt Mine

Pure salt is found in mines like this on Jefferson, Avery, and Weeks Islands.

In 1922 the leading salt-producing states in the Union ranked in the order here given: Michigan, New York, Ohio, Kansas, and Louisiana. The United States imported 230,000,000 pounds, or about one third as much as Louisiana produced; however, recent geologic surveys have shown the amount of salt in numerous salt domes underlying the state to be worth several billions of dollars.

Sand and gravel. Sand and gravel for road work and building construction are scooped from pits in practically every section of the state. Sand is of three main types: building sand, molding sand, and glass sand. Gravel is usually found mixed with clay and sand which are removed at the pit by a washing machine. Washed gravel is screened and graded according to the size of the pebbles.

The annual production of sand and gravel in the state for all purposes amounts to about three million tons valued at two million dollars.

Clay. Clays of excellent quality abound in Louisiana. Potentially, the manufacture of brick, tile, pottery, and other clay products is one of the greatest mineral industries of the state.

Limestone. Although limestone of varying degrees of quality exists in different portions of the state, quarrying as an industry is not well developed in Louisiana. In 1924 there were extracted 169,698 tons valued at $70,197. One quarry operating at Winnfield is in a class by itself. It furnishes material for paving purposes, fertilizers, and lime making.

Oyster shells are extracted from dead oyster reefs.

A plant now being constructed on the Industrial Canal will use oyster shells in cement making.

Fishing

Economic importance. Another industry in which Louisiana commands attention is fishing. Our enormous water areas of various temperatures, ranging in character from fresh to brackish and salt, support innumerable species of fish, about twenty-five of which are leading commercial varieties.

In salt-water fisheries, oysters lead, followed by shrimp, sea trout, and redfish. The catfish and buffalo lead in the commercial fresh-water fish. Including oysters, the product of the fishing industry in 1924 was valued at $9,875,975.

Oysters. Oysters grow in shallow areas containing the proper mixture of fresh and salt water. The presence of certain salts in Louisiana waters gives to our oysters a piquancy peculiar unto themselves. The Louisiana oyster is noted for its excellence in flavor and texture. Oysters of the highest quality are cultivated. Since oysters are prolific breeders, far greater numbers of baby oysters settle on hard clean substances on the sea bottom than can possibly mature. As soon as the oysters begin to crowd, the clusters are broken up and scattered in a broader feeding ground, thus giving each oyster the best possible chance to develop.

Oysters are caught or collected in two ways: in shallow water tongs are used; in deeper water, a dredge. The dredge is much like a rake with a chain-net bag behind it.

Oysters are marketed in three forms: unshelled, shelled, and canned. The 1924 output was 2,607,304 bushels valued at $3,909,956. In the amount of oysters marketed Louisiana is surpassed only by Maryland and Virginia. Over 5000 persons are engaged in this industry.

Shrimp Seining

Shrimp. Shrimp gather in very large schools and are taken by means of seines. As the size of the catch is in proportion to the size of the seine, large seines requiring a crew of twenty men are not uncommon. A newer method is the shrimp trawl, a netting device which is dragged on the bottom of the sea behind a gasoline boat. Trawling requires fewer men than seining.

Shrimp are marketed in three forms: fresh, canned,

and dried. In 1925 there were 6987 persons employed in the shrimp industry. The output was valued at more than $984,000. Louisiana's output is practically equal to the combined output of all other Gulf and Atlantic Coast states, excluding Florida, which produces about one half as much shrimp as does Louisiana.

Canning and by-products. Fish-canning and by-product industries employing 2159 persons yielded an output valued at more than $2,250,000 in 1923. Thirty-six establishments in our coastal parishes produced 292,689 cases of canned shrimp; 33,418 cases of canned oysters; 75,529 tons of crushed oyster shell valued at $532,504; and 428,894 pounds of dried shrimp.

Shrimp are sun dried on large wooden platforms; the heads and shells are a by-product. Rotary driers are now being used to save this material. Of the total amount of shrimp bran produced in the United States in 1923, with a valuation of $31,658, Louisiana's output was $31,394.

Other shellfish. Lobsters, clams, crabs, terrapins, and turtles are caught in great numbers. In the catch of diamond-back terrapins, which are so highly prized by the epicure, Louisiana takes first place; in the catch of crabs, valued at $75,000 annually, Louisiana ranks among the first three states of the Union.

Fresh-water fishing. About 3854 persons are engaged in commercial fresh-water fishing, catching, in 1925, more than 23,000,000 pounds valued at $2,560,601.86. The tabulation on page 186 gives the number of pounds and the value of the leading commercial fresh-water fish taken in 1925.

	Pounds	Value
Catfish	9,509,332	$1,436,390.80
Buffalo	9,088,098	817,928.82
Gaspergou	4,116,720	238,103.20
Paddlefish	249,118	49,823.60
Miscellaneous	89,348	2,680.44
Paddlefish roe		15,675.00

At White Lake in southwestern Louisiana the paddlefish industry is very extensive. Caviar, a favored delicacy of Europe, is made from the roe.

Fish protection. Our state laws protect fish during the spawning season; wardens are employed to see that the laws are not violated. Lakes and streams are stocked with fish from the hatcheries. From the Beachwood Hatchery, near Alexandria, any citizen of the state may, on application to the Department of Conservation at New Orleans, obtain fish free of cost for stocking ponds or streams that have been proved satisfactory for propagation purposes.

Trapping

Economic importance. The trapping industry has grown to such proportions in Louisiana that, in the spring of 1925, records showed a catch of more pelts in Louisiana than in any other state in the Union, and even more than the combined catch of all the great fur-producing provinces of the Dominion of Canada.

The muskrat gives the state preëminence in the fur world, since Louisiana contributes over one half of the muskrat pelts used by the garment-making trade today. During the trapping season buyers visit the fur trappers' camps daily, paying about $1.25 for muskrat pelts and

A Muskrat Trapper

from $5 to $7 each for raccoon and mink furs. Prices for muskrat pelts vary considerably from year to year, ranging from eight cents to three or more dollars each. Other pelts bring from $1 to $25 or more each. A good trapper makes several thousand dollars annually. Of the 1924–1925 total fur catch of 6,731,265 pelts, which brought about $6,500,000 to our trappers, 6,196,165 were muskrat pelts.

America is the greatest fur-using country of the world. While the fur trade is more concentrated in New York City than elsewhere, New Orleans has a number of fur manufacturers and repairers, and some of our other larger cities in Louisiana have hide and skin dealers.

Varieties. Trapping is widely distributed throughout

the state; the swamps and higher lands of the coastal parishes are trapped for raccoons, minks, opossums, and otters; the marsh lands mostly for muskrats. In the order of importance, the leading animals trapped are muskrat, opossum, raccoon, mink, skunk, otter, wolf, fox, weasel, and beaver. In the number of muskrat and mink pelts Louisiana far exceeds all other states; in opossum and raccoon skins our state is approached only by Arkansas.

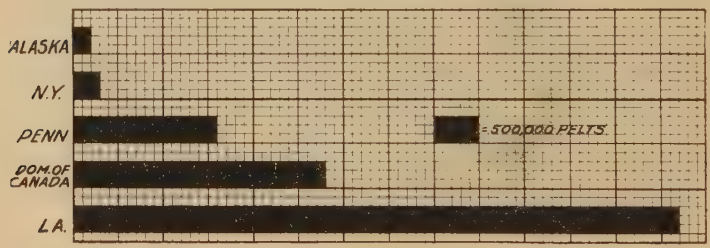


Figure 22. Fur production, Louisiana with other regions, 1924–1925

Species	1924–1925 Take	Value to Trapper
Muskrat	6,196,165	$5,142,896
Opossum	287,180	258,462
Raccoon	145,810	583,240
Mink	84,301	421,505
Skunks	14,752	18,440
Otter	2,110	31,650
Miscellaneous	947	947
Total	6,731,265 pelts	$6,457,140

For the sole purpose of comparison the following figures may be quoted:

Alaska in the 1924–1925 season, produced 285,545 pelts of all kinds. (Figures from United States Biological Survey.)

New York, latest available figures, 344,283 pelts. (Conservation commission of New York figures.)

Pennsylvania, 1,637,307 pelts, valued at $2,899,340 (estimated by Board of Game Commissioners of Pennsylvania).

Dominion of Canada, all provinces, 1924–1925 season, 3,820,326 pelts of all kinds, of which 2,515,142 were muskrats. (Figures from Dominion Bureau of Statistics, Fur Branch.)

Muskrat ranching. A steadily diminishing world supply of the larger furs makes Louisiana's fur industry of ever increasing importance. To make it a permanent one, there has developed a system of muskrat "ranching." Control and careful supervision are exercised over large areas of marsh lands; work in ditching, building of levees, and planting of grasses is carried on; care is taken not to deplete the fur supply by too close trapping.

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CHAPTER X

MANUFACTURING

Introduction. Nearly all natural products must be more or less modified artificially before they can be used by man. This leads to the development of various manufacturing industries. So numerous are the kinds of manufactures that the word industry is commonly used, not in its broader sense, covering many forms of occupation, but in a narrow sense with a restricted meaning including only manufacturing.

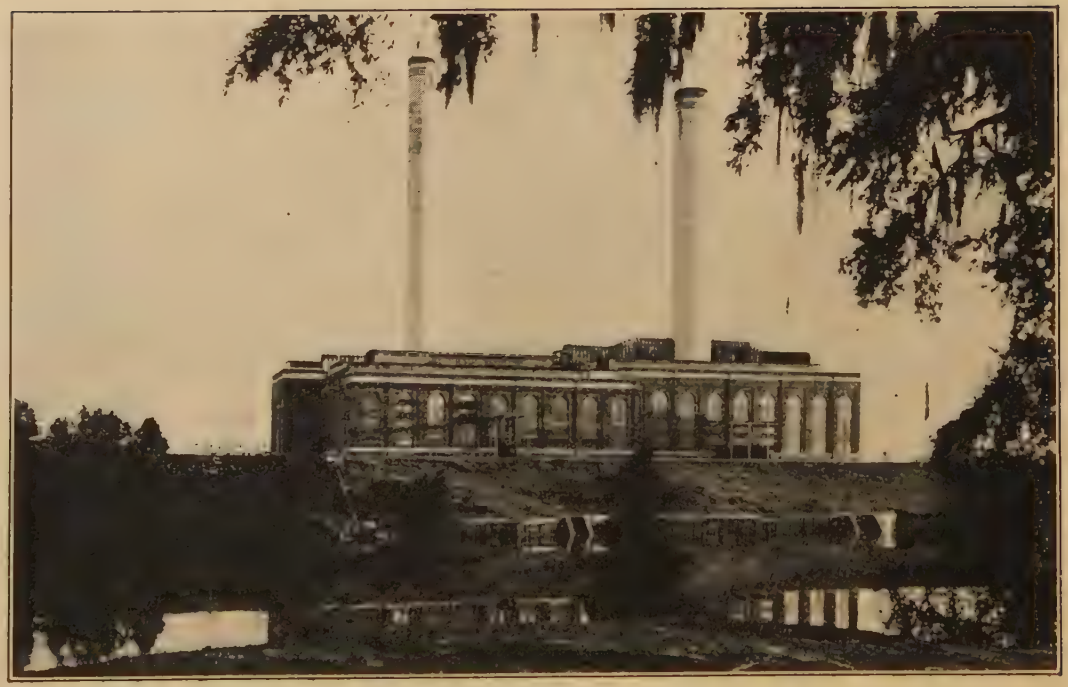
Natural products which must be modified artificially for man's use fall into three great classes: (1) those of vegetable nature, (2) those of mineral nature, and (3) those of animal origin. Manufacturing in Louisiana includes all three classes, with numerous subdivisions as seen in the Appendix, Table 33. To show how fast Louisiana is forging ahead in the industrial world it is only necessary to state that the manufactured products of the state more than tripled in value between the last two census years (1910 and 1920), and present conditions indicate that an even greater increase will be recorded in the census report for 1930.

In general, the location and growth of manufacturing in any particular place depend on certain conditions or combinations of conditions, namely: (1) a supply of natural or raw material, (2) fuel or source of power, (3) efficient labor, (4) capital, and (5) an accessible market.

Influence of raw material. The presence and character of raw material are important factors in locating some of our industrial plants. When raw material is bulky it costs too much to transport it far; it is, therefore, manufactured near the source of supply. This is the case with sugar cane, from which the juice is extracted on the plantation. Raw sugar may, however, be shipped long distances to be refined.

When raw materials are perishable they must be manufactured near the source of supply. For this reason our industrial plants that pickle, dehydrate, or can vegetables and those that convert vegetables into sauces are located in trucking regions. Industrial plants which preserve fruit or can fish and oysters are likewise located in areas of production. Certain raw materials are too cheap to be transported economically to distant points. This is the case with sand and gravel, limestone, and, in a lesser degree, salt.

Influence of power. The most potent factor to be considered in the location of a manufacturing plant is, perhaps, fuel costs. In the past, wood has been extensively used for fuel in Louisiana. Our present great source of power is oil and natural gas. Many municipally owned plants and several large power companies convert these into electrical energy which is transmitted over high voltage lines to a wide area. As far as can be ascertained, every Louisiana town with a population of seven hundred or more is supplied with electricity. A huge generating station recently built at Sterlington (near Monroe) on the Ouachita River is one of the largest generating stations in the Southwest.



Sterlington Power Plant

To insure less chance for interruption of service, power systems must not be dependent upon the output of any one power station; therefore, Louisiana companies have interconnected power lines within the state, also interconnection with Texas, Arkansas, and Mississippi. Thus Louisiana is in the center of a super-power-system loop, supplied with electric power derived from four sources: water, natural gas, oil, and coal.

Many manufacturing plants which have heretofore used other sources of power are now turning to electricity. Among these may be mentioned rice mills, sugar refineries, oil refineries, cottonseed oil mills, furniture factories, iron foundries, cold storage plants, and many others. In one paper mill at Bastrop more electricity is now used than is required for domestic consumption by a city of sixty thousand people. In large sawmills in which mill waste has been used as fuel the owners are turning to electric power and converting the waste into wood pulp.

Influence of labor. The supply of labor is another condition which influences the location and growth of manufacturing. Without efficient labor no industry can succeed; but labor is not considered so dominant a factor as cheap power, because labor may be brought from other sections. In Chapter II we learned that the majority of the population of Louisiana consists of native-born whites. This high-class citizenship easily and quickly adapts itself to industrial occupations.

Influence of capital. It takes a great deal of money to build factories and to buy machinery. For this reason a very poor state or country cannot have many large

industrial plants. For about fifty years the lack of capital prevented the development of industry in this state. In 1860 Louisiana was recognized nationally as a very wealthy state, having the greatest per capita taxable wealth of any southern state and a far greater per capita wealth than the average for the nation (Appendix, Table 1).

Conditions incident to the War Between the States so impoverished Louisiana that practically no industrial development was possible before 1890. At that time Northern capital became greatly interested in southern yellow pine. This led to the development of the great lumber industry of the state. Louisiana has since gradually regained her former relative wealth. Many industries are now financed entirely by local capital; Northern and Eastern money is still being invested in our state in ever increasing quantity. For this reason the leading business men of the nation predict for Louisiana a more rapid industrial development than we have ever before experienced.

Influence of market. To keep the wheels of industry running smoothly, the finished product as manufactured must be disposed of in the local, national, or world market. Within the borders of our state, New Orleans, the largest city of the South and the second largest seaport in the United States, is our chief market. Ten other cities ranging in population from ten thousand to nearly a hundred thousand serve to enlarge the local market. An excellent system of highways and an extensive system of railways make the local markets within easy reach. The trunk lines of railroads and the Mississippi-Warrior

and other barge lines not only serve local needs, but they make the greater portion of the Union easily accessible as a consuming market for our products; and the numerous steamship lines operating out of New Orleans, Baton Rouge, Lake Charles, and other ports open the markets of the world to the output of Louisiana manufacturing plants.

The International Trade Exhibition. Based on the economic principles to which is due the success of the great world-renowned Nizhni Novgorod Fair of Russia, there has been established in New Orleans the Permanent International Trade Exhibition. For centuries, buyers and sellers of the world have met periodically at conveniently situated points to promote trade. As industries and nations become more interdependent, it becomes more and more necessary to have some centrally located point at which all kinds of produce and manufactured commodities may be exhibited to facilitate buying and selling. Representative lines of manufactured articles from the state and nation and from foreign governments and industrial corporations are gathered together in the International Trade Exhibition. This should not be confused with world fairs; it is a permanent exhibition of world-wide scope and operates under the auspices of the United States Government. The exhibition is not only of inestimable commercial value to our state and nation, but it is of the greatest educational value as well.

In discussing oil, gas, lumbering, and fishing we have sufficiently noted several leading forms of manufacturing in Louisiana. Other important kinds follow.

The Permanent International Trade Exhibition

1. Manufacture of Vegetable Products

Sugar

Economic importance. Sugar is one of several articles of food for which our nation largely depends on foreign countries. While the United States ranks first among the sugar-using nations, consuming about one fourth of the world's supply, its production is less than a fifth of what it consumes. Practically all the cane sugar in continental United States is produced and refined in Louisiana. Experiments now being conducted indicate that sugar-beet production may also be added to Louisiana's industries.

During and following the War Between the States, the sugar output in Louisiana dropped from 235,856 tons annually to 9000 tons, and one year to only 5000 tons. That it is again an important industry may be seen in the last census report, which gives Louisiana an output of raw and refined sugar valued at $141,843,000. This report credits Louisiana with 192 sugar factories and refineries with 8840 employees.

Refining. Juice extracted from the cane by heavy rollers goes through a clarification process, after which it is boiled in vacuum pans to the crystallization stage. By a very rapid whirling motion the crystals are separated from the liquid which is thrown through the perforated sides of the centrifugal. This sugar, known as raw sugar, varies in quality from a light-brown color with well-formed crystals to an inferior blackish mass with poorly formed crystals.

In converting raw sugar to the snow-white article used

CHALMETTE PLANT OF THE AMERICAN SUGAR REFINING COMPANY

This refinery just below New Orleans is said to be the world's largest single-unit sugar factory

on our tables, the sugar is dissolved in warm water, treated with chemicals, and filtered through huge cylinders of bone black or char. The clear and colorless filtrate passes to the vacuum pans and centrifugals as in the raw sugar process. If granulated sugar is wanted the crystals from the centrifugals are passed through a revolving drying drum. To make cube or lump sugar the liquor from the vacuum pans is run into molds and cooled. The slabs are then run through the centrifugals, dried in ovens, and sawed into the desired size.

Location of mills. A number of sugar mills are located in the southern and south-central parishes, which make up the great sugar belt of the state. Some mills produce only raw sugar, while others produce both the raw and the refined. A few miles below New Orleans, on the east bank of the Mississippi, is the Chalmette Refinery of the American Sugar Refining Company, one of the world's largest sugar refineries. It has an estimated output of 800,000,000 pounds annually. It receives its supply of raw sugar from Louisiana plantations and from Cuba and other foreign countries.

Molasses. In the process of making sugar the clarified juice is concentrated in vacuum pans until sugar crystals form. Rapidly whirling centrifugals then separate the crystals from the liquor, which is called molasses. This liquor is boiled and reboiled and sugar extracted until it is unfit for human food. It is then used for the manufacture of industrial alcohol and also for mixing with other materials for cattle food. Mill molasses is known as blackstrap. The greater part of the molasses used in the United States is made in Louisiana.

Syrup. Another industry, separate and distinct from the sugar mills, is syrup making. While this cannot be classed as an extensively developed industry, it is widely distributed throughout the state, chiefly on small farms outside the sugar belt. However, one of the largest syrup factories in the country is found in Jefferson Parish, near New Orleans. Syrup making is a rapidly developing industry; Louisiana's annual output of syrup is from 5,000,000 to 8,000,000 gallons. Syrup making on a large scale has been established on some plantations in the sugar belt and bids fair to grow in importance.

In the manufacture of open-kettle syrup, no sugar is extracted from the cane juice. Louisiana cane syrup is recognized throughout the country as one of the most desirable table syrups on the market. The soil of the north Louisiana parishes is particularly adapted to a syrup of highly palatable flavor. As the merits of this syrup become more widely known, the demand for it will materially increase.

Celotex. For centuries, bagasse, which is the dry refuse of cane stalks after the powerful rollers have extracted the juice, was a waste material. In 1920 a process was devised for converting it into a building board to which the name celotex has been given. Under the microscope, bagasse reveals two unusual characteristics. First, each fiber contains countless tiny "hooks" which, when the fibers are interlaced, cling together with remarkable tenacity. Secondly, bagasse contains many sealed air cells. The first quality gives marked tenacity and strength to celotex boards, and the second renders celotex an excellent heat-insulating material.

LOUISIANA CELOTEX COMPANY

Where a former waste product is converted into building material. Note bales of bagasse which are shipped here from sugar mills throughout southern Louisiana.

Across the Mississippi from New Orleans, at Marrero, a mammoth plant has been erected by the Celotex Company which is producing more than 200,000,000 board feet of celotex a year. The plant covers a tract of one hundred acres and employs approximately one thousand workers.

Rice

Milling. Harvested rice as it comes from the thresher is called rough rice. It must pass through various complex machines before it becomes the milled head rice which is sold by our grocer. Rice grains have four distinct parts:

Straw Stack and Bags Filled with Rice

an outer husk or hull, an inner skin which varies in color from creamy white to deep red, the kernel which we use for food, and the germ which sprouts and reproduces the plant. The hull, skin, and germ are all removed from the kernel in the process of milling. The nick or cavity at one end of a grain of head rice once contained the germ. Grains broken in the process of milling are known according to size as second head, screenings, or brewers' rice.

Economic importance. The rice industry now uses every part of the product. Polished rice and unpolished rice are both used for human food; broken rice for making rice flour, starch, and face powder; and the bran and polish for poultry and stock feed. The hulls and straw

are used for making cellulose and for packing purposes. Lake Charles has the only plant in the United States that manufactures cellulose from rice hulls.

The 1920 census reports forty-six rice mills in Louisiana employing 1889 persons, with an output valued at more than $41,000,000. Twenty-eight of these mills are located in the rice-producing area of southwestern Louisiana, with Crowley as the center. New Orleans has eight cleaning and polishing mills.

Cotton

The manufacture of cotton falls into three main divisions: (1) ginning, or the separation of the seed from the fiber; (2) refining, or the converting of the seed into oil and other products; and (3) milling, or the transforming of the fiber into fabric.

Ginning. Every large plantation has its own gin to which is also brought cotton from smaller fields in the vicinity. Through a flexible pipe the cotton is drawn by suction from the wagon or truck into the gin, where it is first freed from dust and other impurities. Revolving saws then tear the lint from the seed; the seeds drop through one opening, the lint is blown through another to the cotton press, where it is made into bales.

Compressing. At another separate and distinct plant, called the " compress," bales which are to be shipped long distances are compressed to a much smaller size. The larger trade centers of northern and central Louisiana have one or more compresses each; New Orleans has several in which the cotton bales are compressed before they are stored or exported.

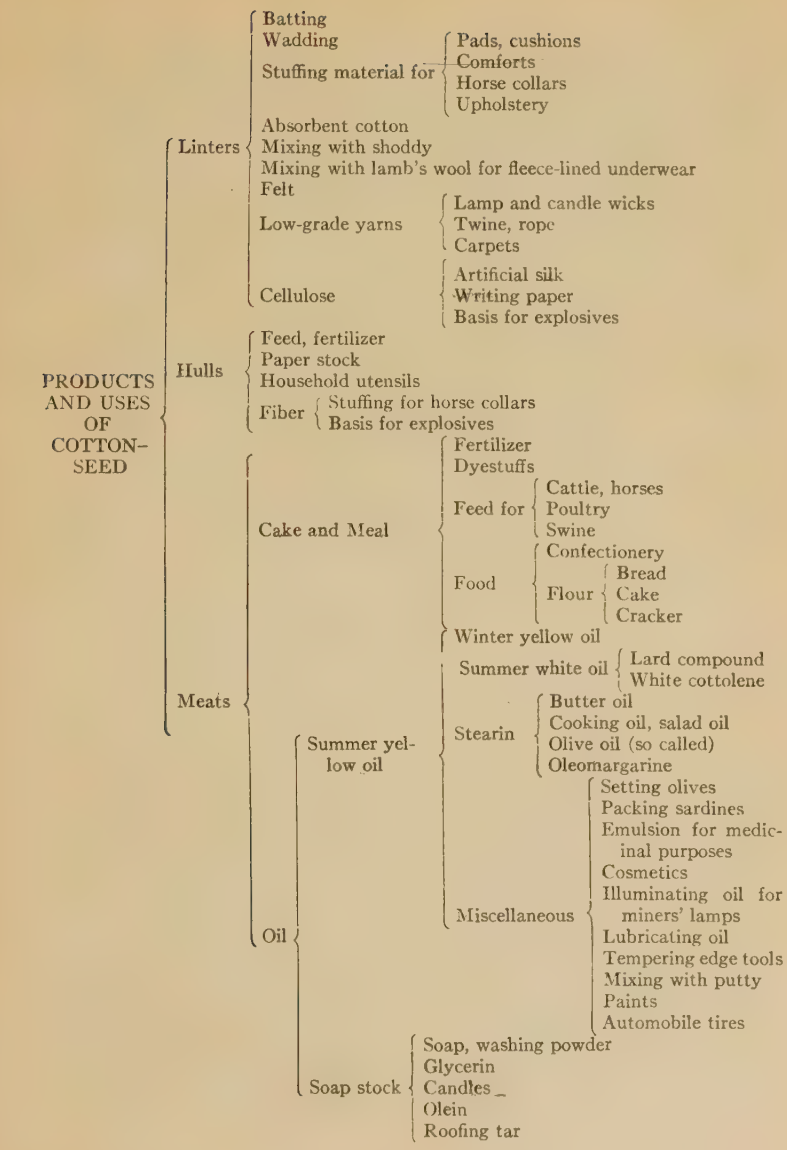
Cottonseed oil milling. There are numerous oil mills in Louisiana to which seed from the plantation gins is brought to be converted into various products, chief of which are crude cottonseed oil, cottonseed oil cake, lint, and hulls. These products are used as raw materials for further manufacture. The seed are first freed of lint and hulls; the kernels are then heated, crushed, and pressed to extract the oil. The solid material remaining after the oil is extracted is known as oil cake. This is ground into cottonseed meal which is rich in protein and makes an excellent food for cattle. It is also a rich nitrogenous fertilizer.

The crude oil is purified by being treated with chemicals; the sediment which sinks to the bottom is known as "crude cotton oil foots" and is used in soap manufacture.

The refined oil is almost odorless, pale straw in color, and has a slightly nutty flavor. It is extensively used in cooking. Perhaps nine tenths of all the "salad oil" consumed in the United States consists of cottonseed oil. By adding tallow, or beef suet, cottonseed oil may be made into a solid fat used in cooking as a substitute for lard or butter.

The 1920 census gives twenty-eight establishments in Louisiana producing oil cake and meal, with 1927 persons employed. The product was valued at $57,161,578. The table on page 205 shows the variety of products derived from cottonseed.

Cotton mills. The textile industry, which was confined for the main part to the northeastern states until about twenty years after the War Between the States, has developed a trend southward. The number of spindles


PRODUCTS AND USES OF COTTON-SEED
Linters
Batting
Wadding
Stuffing material for
Pads, cushions
Comforts
Horse collars
Upholstery
Absorbent cotton
Mixing with shoddy
Mixing with lamb's wool for fleece-lined underwear
Felt
Low-grade yarns
Lamp and candle wicks
Twine, rope
Carpets
Cellulose
Artificial silk
Writing paper
Basis for explosives
Hulls
Feed, fertilizer
Paper stock
Household utensils
Fiber
Stuffing for horse collars
Basis for explosives
Meats
Oil
Cake and Meal
Fertilizer
Dyestuffs
Feed for
Cattle, horses
Poultry
Swine
Food
Confectionery
Flour
Bread
Cake
Cracker
Winter yellow oil
Summer white oil
Lard compound
White cottolene
Summer yellow oil
Stearin
Butter oil
Cooking oil, salad oil
Olive oil (so called)
Oleomargarine
Miscellaneous
Setting olives
Packing sardines
Emulsion for medicinal purposes
Cosmetics
Illuminating oil for miners' lamps
Lubricating oil
Tempering edge tools
Mixing with putty
Paints
Automobile tires
Soap stock
Soap, washing powder
Glycerin
Candles
Olein
Roofing tar

White unto the Harvest

in the South now exceeds the number in the New England States. Louisiana has four knitting mills, only one of which does its own spinning, and there are two weaving mills which spin their own yarns and do all the processing necessary to produce perfect and standard fabrics. At the present time the main textile products of Louisiana's mills and factories are: denims, chambrays, cotton suitings, sheetings, osnaburgs for bags, hosiery, and automobile brake-lining fabric.

Clothing. The 1920 census report gives twenty-eight establishments producing men's and women's clothing, valued at more than $4,250,000. There are 1102 persons employed in making men's clothing. Other cities depend largely upon New Orleans for men's wash suits.

Bags. Bag making is an important industry in New Orleans. Ten firms, which employ several thousand men, are engaged in bag making. Some bags are made from cotton, others from burlap. A great deal of burlap is imported from India for this purpose. While the 1920 census report lists the value of bags made in Louisiana at more than $18,000,000, the output is now much greater since several additional plants have been constructed. Tarpaulins, awnings, tents, sails, and twine are also extensively manufactured in Louisiana.

Food products. The value of food products manufactured in Louisiana runs far into the millions. Canning, preserving, pickling, and dehydrating plants are found in the trucking and fruit-growing areas. Among Louisiana's condiments, sauces, and extracts, the pepper products are far famed. Coffee roasting and grinding mills, of which there are a great many in the state, yield

an $8,000,000 output. Bread and bakery products are important, as are also crackers and small cakes, cereals, and macaroni. New Orleans candies are widely known and are unsurpassed in quality. Bottling works, ice-cream factories, and ice plants are numerous.

Tobacco. With the exception of one plant at Convent, the report of the State Commissioner of Labor confines the manufacture of tobacco into cigars and cigarettes entirely to New Orleans. The value of the tobacco products in 1920, according to the United States census report, was approximately $8,225,000.

Moss. From Rapides Parish to the coast we find moss gins and factories, there being about fifty-five listed by the State Commissioner of Agriculture. In 1924 the output was 24,000,000 pounds, valued at $750,000.

Moss is gathered from the trees in its green state and sun cured from four to six weeks before it is taken to the gin. In the ginneries it is worked up into several grades according to its fiber, quality, and degree of blackness; then it is made into bales averaging 150 pounds. The finished product is used for upholstery, the unprepared moss as a packing material.

2. Manufacture of Minerals

Metal works. The oldest iron manufacturing plant in Louisiana, located at Gullet near Amite, manufactures cotton gins and attachments. The plant covers an area of more than twenty-five acres. Ninety foundry, boiler, and sheet metal works, well distributed throughout the state, employ 3000 persons and yield a product valued at $11,000,000, according to the 1920 census report.

In addition to these, there are numberless automobile repairing and assembling plants. Metal furniture and store and office fixtures are likewise made in Louisiana; ents in 1920 had an output valued at . More than 1000 people are employed ies.

dry docks. Several shipyards and dry Orleans, the majority of which repair ll craft for pleasure purposes and boats . Others are equipped to repair and a-going vessels now in use. The 1920 siana's steel shipbuilding products at 50,000; the wooden at $5,165,000.

concrete. Brick kilns consuming are found in the larger towns and state. Monroe has a pottery plant; chitectural stone company; and a ive plants molding artificial stone, istic vases, urns, and similar wares. being heavy and bulky, these articles are usually produced near the point of consumption. There are also many marble and granite works in the state. The crushing of shells is noted on page 185.

Glass making. The location of the glass-making industry is dependent to a marked degree upon the source of fuel supply. Gas is the preferred fuel, since it is clean, gives intense heat, and can be kept under perfect control.

The principal raw materials used are sand, lime, and sodium carbonate, potassium carbonate, or sodium sulphate. These are heated in a furnace, and the molten mass is run through a machine and delivered as a finished

commodity. Plate glass is a high-grade glass which has been passed between two rollers to give it a beautiful smooth surface.

While Pittsburgh was for years the greatest glass-manufacturing district of the United States, the gas fields of that section are diminishing in supply, causing glass manufacturers to seek new locations. North Louisiana has a number of glass plants, the one at Shreveport ranking among the important plants in America. Including warehouse storage, the plant covers more than seven acres. The company spends more than $2,000,000 annually for salaries, raw materials, and freight.

Fertilizers. As Louisiana furnishes but a small portion of the materials of which commercial fertilizers are composed, her part in the fertilizer industry is chiefly in the mixing. The essential elements of plant food, nitrogen, phosphorus, and potash, are furnished by other states and countries. Potash salts are imported from Germany principally, with a small amount coming from California. Phosphate rock comes from Tennessee, Georgia, and Florida. This raw rock phosphate is treated with sulphuric acid to render the phosphorus available for plant use. Louisiana furnishes sulphur for the production of sulphuric acid and supplies cottonseed meal which is rich in nitrogen; but the quick-acting nitrogenous fertilizers are imported from Chile, Germany, and Denmark.

Although the 1920 United States census report showed only 677 persons employed in Louisiana in six fertilizer establishments having an output valued at $4,197,285, the report of the State Commissioner of Labor for the

year 1925–1926 shows an increase to twelve establishments, in which 2356 persons are employed.

Drugs and chemicals. From a list of articles made in Louisiana we select as leading varieties the following: sulphuric and other acids, ammonia, cough balms, antiseptics, liniments, disinfectants, insecticides, ant poisons, turpentine, alcohol, paints, varnishes, roofing compounds, clarifiers and cleaning preparations, soaps and shampoos, bay rum, toilet creams, lotions and powders, dentifrices and perfumery. While many single drugs and chemicals mount in value into hundreds of thousands of dollars and alcohol extends into millions, there are also produced numerous minor articles which have very considerable value.

3. Manufacture of Animal Products

Slaughtering and meat packing. Although meat packing is not considered an important industry in Louisiana, there are slaughtering and packing plants at New Orleans, Shreveport, Alexandria, and Arabi, besides the Baton Rouge city abattoir and a butchers' coöperative abattoir at New Orleans.

The 1920 census gives the output of three packing houses at approximately $850,000 and of eight sausage plants at $325,000. Their output includes practically all regular packing-house products.

Leather. Boots and shoes and slippers to the value of $1,136,000, and saddlery and harness valued at approximately $1,000,000, are reported in the 1920 United States census report. The manufacture of these is confined almost exclusively to New Orleans.

Creameries. Although Louisiana is not at present an important center of butter production, creameries are located in Caddo, Webster, Lincoln, Ouachita, Rapides, Calcasieu, Acadia, Lafayette, Iberia, Ascension, East Baton Rouge, and Tangipahoa parishes East Baton Rouge has a cheese factory, and Tangipahoa and Orleans parishes have condensing plants. The cow on the general farm is becoming recognized as a ready money-maker.

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(For additional references, see end of Chapter VI, page 125.)

CHAPTER XI

NEW ORLEANS — AMERICA'S MOST INTERESTING CITY

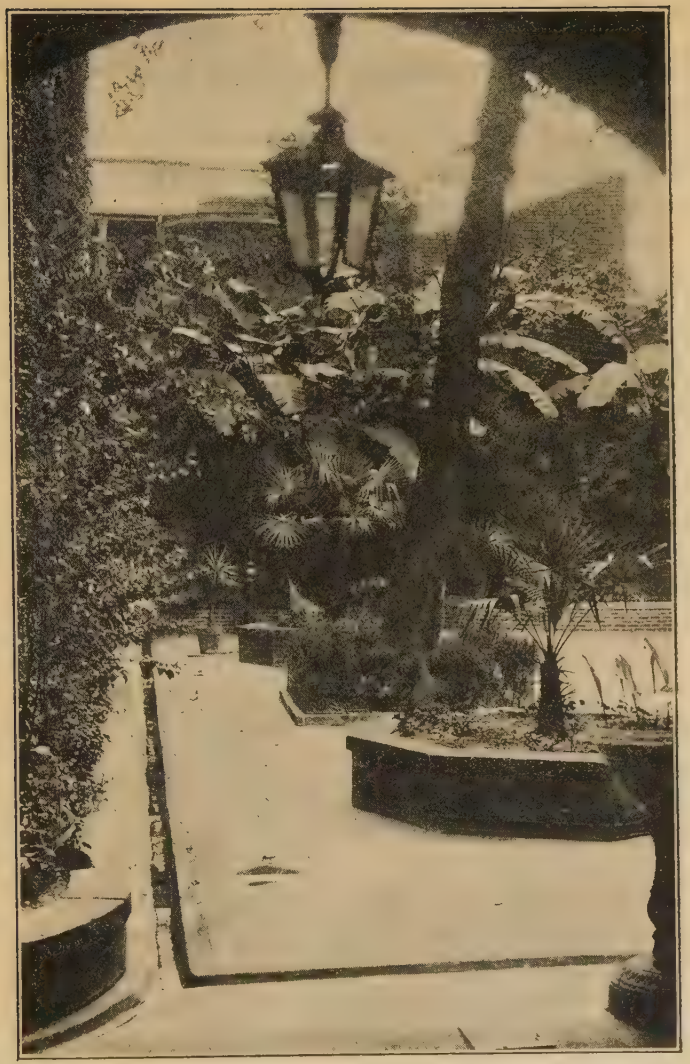
History

New Orleans, America's most interesting city, was founded by Bienville in 1718, upon the east bank of the Mississippi River. When La Salle planted the cross upon Louisiana soil (1682) and claimed the entire Mississippi Valley for France, he had great dreams of a future colony; but the plans of La Salle proved unsuccessful. Moreover, the efforts of Crozat to develop the colony a few years later were likewise failures. It was not until 1718 that the beginning of what would some day be the city of New Orleans was started by Jean Baptiste LeMoyne de Bienville. Very carefully did Bienville select the site for his colony. After a study of the surrounding country he decided upon a most favorable location, a slight rise of ground one hundred and ten miles up the Mississippi from the Gulf of Mexico.

The town site was surveyed by De la Tour and Pauger and laid out as a rectangular village of more than sixty blocks. These constitute the Vieux Carré (Old Square) of today. A large military square, the Place d'Armes, was set apart in the center of the south side. A school, a church, a government house, and a few huts were built around the square and comprised the whole of the small

Nouvelle Orleans. In 1719 five hundred negro slaves were brought into the settlement. This necessitated the adoption of laws, the Black Code, for their government. The most important provision of the Code, that forbidding the intermarriage of black and white races, is still enforced in Louisiana. In this same year, John Law, by means of gross exaggerations, induced many Germans to come to New Orleans to "become rich overnight." Law's scheme, known as the Mississippi Bubble, failed. Bienville persuaded the disappointed Germans to settle along the river above the town. These thrifty Germans tried to make the best of their plight and secured a living by agricultural means. Their settlement is still referred to as the German Coast. Under the able management of Bienville, the New Orleans colony became firmly established and assumed strategic importance. It was growing slowly but surely. Convinced of his wisdom in the selection of the site of New Orleans and dreaming of a great metropolis in the future, Bienville in 1722 persuaded the French government to make the village the capital of the Louisiana Territory.

There were few women of good character in the colony; consequently permanent home life among the settlers was impossible. Bienville realized that the men were degenerating. In 1727 he tried to better conditions by having bands of French women come to live in the colony. These good women were protected by the Ursuline nuns who cared for them until they were married. They were called the Casket Girls, *Filles à la cassette*, since each upon her departure from the home country received an overflowing trousseau box. Tradition says that one girl refused to



A Glimpse into the Patio Royal

One of the many interesting courtyards in the Vieux Carré.

marry any of her suitors; hence she had to return to France unwed.

A company of Jesuits arrived at New Orleans in 1726. These Jesuits established a church, a mission, and the first agricultural school of Louisiana. They introduced the cultivation of sugar cane, indigo, oranges, figs, and wax myrtle. The Capuchins (Catholic monks) came over with the Jesuits. They established a convent in which boys were given an elementary education. If a higher education was sought, one had to go to France for it. The able and cultured Ursuline nuns, the quiet, black-gowned Catholic sisters, educated the girls of the colony at the Ursuline Convent.

The colony grew steadily despite many hindrances. All Indian outbreaks were suppressed by the valiant Frenchmen. Negro insurrections were likewise overcome. Contagious and destructive fevers were conquered. Unstable currency and ridiculous laws and regulations, framed by a mother country unacquainted with Louisiana conditions, were surmounted. Recurring floods and fires were other obstacles which impeded the progress of the new town. In 1788 a great fire reduced to ashes eight hundred and sixteen buildings in the very heart of the Vieux Carré.

New Orleans remained under French control until the close of the fourth French and Indian War, in 1763, when the whole isle of Orleans, including New Orleans, was ceded to Spain in the Treaty of Paris. Great dismay and consternation prevailed in New Orleans when the news of the cession was received. By the secret treaty of St. Ildefonso, Louisiana again became French territory in 1800

and so remained until 1803, when the territory was purchased by the United States from Napoleon Bonaparte. In 1805 New Orleans received a charter as an American city. Under the protection of the United States, it developed in wealth and in importance into the metropolis of the South.

Inseparable from the early history of the city are the names of Bienville, its founder, the "Father of Louisiana"; Baron de Carondelet, who first walled the Vieux Carré; the romantic Ulloa, first Spanish governor over New Orleans; the cruel O'Reilly, the Spanish governor who succeeded the gentle Ulloa; the patriotic Lafrenière and Noyan, the Louisiana martyrs who were executed by command of O'Reilly; the brilliant Galvez, who carried out Spanish reconstruction in New Orleans; Étienne de Boré, whose successful experiment in crystallizing sugar from the juice of the sugar cane brought agricultural prosperity to the colony; the piratical Lafittes, the Baratarian smugglers; Andrew Jackson ("Old Hickory"), the hero of New Orleans; Soulé; Beauregard; Paul Morphy; John McDonogh; Margaret Haughery; Charles Gayarré. These, now but figures from the shadowy past, are part of the historic heritage not only of old New Orleans, but of our state.

The Geography of New Orleans

The city of New Orleans, with an area of 196 square miles, has the same boundaries as the parish of Orleans. It is the largest city in population and in area south of Mason and Dixon's line. It is the nation's second port. The importance of New Orleans' situation at the gateway

of the immense fertile Mississippi Valley is equalled by that of few cities.

The uniformly delightful climate of New Orleans is effected by the levelness of the country, the nearness of the city to large bodies of water, and the direction of prevailing winds. There is no distinct rainy season, as many outsiders suppose. The southeasterly winds from the Gulf, the warm Gulf Stream, Lake Pontchartrain, Lake Borgne, and the Mississippi River regulate both humidity and temperature. Breezes from gulf and lake keep the city pleasant and healthful during both summer and winter months.

The land upon which New Orleans stands was once an area of marsh and swamp with cypress trees and tangled undergrowth. Levees and drainage canals were constructed at the expense of the parish; and now only a small part of the swamp lands of the city has yet to be reclaimed by the drainage system. Nowhere in the world are there levees of as great size and strength as those that have been built by the parish of Orleans to confine the floods of the mighty Mississippi within the channel. There are more than forty-two miles of Mississippi River water front within the port of New Orleans.

New Orleans is one of the world's great delta cities. The Mississippi, on its way to the sea, collects mighty loads of sediment from its vast valley. This silt is the material of which has been built up the rich, fertile, alluvial plains of southern Louisiana. As the river nears its delta, it approaches sea level; hence it becomes sluggish. This retardation causes the major part of the sediment to settle, thus making the river bed shallower. The

Carondelet Street, the Financial Center of New Orleans

modern steamship, drawing from twenty-five to thirty-five feet of water, could not enter the mouth of the river if this impediment were not overcome. No glorious commercial success could ever have been possible for New Orleans had it not been for such a brilliant mind as that of the American engineer, James B. Eads. He studied the situation and constructed the famous Eads jetties which narrow the river and increase the velocity of the current, causing it to scour the channel to a depth of more than thirty feet. The Eads jetties have been an important factor in making New Orleans the port that it is.

To provide water-front sites for private industries, the Industrial Canal, or the Inner Harbor Navigation Canal, was dug recently at a cost of $20,000,000. In connecting Lake Pontchartrain with the Mississippi River, the canal provides an additional twelve miles of frontage. This offers exceptionally fine sites for manufacturing plants and industrial enterprises, since the port provides facilities for handling commodities and permits rapid movement of freight by rendering service over rail and water. Enterprising firms have already established plants on some of the advantageous sites along the canal.

Wharfs, steel sheds, warehouses, elevators of modern type, and other facilities have been built by the New Orleans Dock Board. Steamship lines radiate from New Orleans to practically all parts of the world. Favorable rail and water rates bring commerce to New Orleans from the entire Mississippi Valley as well as from the markets of Mexico, Central and South America, the West Indies, and the more distant countries of the Orient. New Orleans is the receiving and distributing center

for the products of these countries. The Mississippi River is the greatest natural factor of this trade between the central United States and the foreign markets, not only of the Latin-American States but also of Asia, Australia, and the islands of the Pacific Ocean.

Rail meets water to make New Orleans a great and logical shipping point. Trunk lines have their terminals there; and the New Orleans Public Belt Railroad systematizes all rail lines, terminals, and water-front facilities. There are now twelve railroads radiating from the city; while nearly a hundred steamship lines are using the port regularly. The facilities for the quick handling of ocean freight have an international reputation. At the Public Cotton Warehouse, owned by the state and operated by the Dock Board, five ships can be loaded at one time. The Industrial Canal will soon be paralleled through its length on both sides by the Public Belt Railroad. This will link up all railroad lines entering New Orleans with the industrial development which is now taking place along the canal.

Industries

New Orleans stands at the entrance to the Mississippi Valley which produces 80 per cent of the crops of North America, 70 to 90 per cent of its chief minerals, and 50 to 80 per cent of its manufactured products Unlimited sulphur supplies are practically within the portals of the city; the largest salt deposits in the western hemisphere are near and enable New Orleans to manufacture quantities of hydrochloric acid. Petroleum and natural gas provide excellent fuel for industrial use at low cost. Crude

Unloading a Cargo of Bananas

oil from Mexico is imported from Tampico and Vera Cruz and its refined products exported to Philadelphia and thence to northern ports. Paper, rayon, and furniture are made in the Crescent City from the lumber obtained from the forests of Louisiana. New Orleans, besides being the greatest mahogany port in the world, is the chief lumber port of the United States. It is also the world's greatest banana port.

The abundance of sea foods, shells, sand and gravel, the natural gas and lignite, the raw furs, and the unlimited products of the rich Louisiana soil — sugar cane, cotton, rice, vegetables, and fruits — are responsible for the big trade activities in New Orleans. Foods produced both on land and sea have caused the development of a great canning industry. Textile mills and warehouses for the storage of raw cotton are increasing rapidly. Lard substitutes, edible oils, soup stocks, rayon, and celluloid are being made from the seed and fiber of the cotton plant.

Other industries of New Orleans vary widely. Due to the fact that the city is the center of a large, though local, supply and demand district, the meat-packing industry is becoming important. It is the center of the wash-suit industry. New Orleans candies are widely known. A Ford assembling plant has recently been established in the city. With the establishment of a million-dollar shipyard at the Lake Pontchartrain end of the Industrial Canal, New Orleans is becoming a shipbuilding center.

A Federal Naval Station is located at New Orleans. The New Orleans Army Supply Base covers an area of forty-eight acres and has three concrete warehouses with

JACKSON SQUARE

The " Place d'Armes " of Bienville, who built his city around the square. Left of the triple-spired St. Louis Cathedral is the Cabildo (now a state museum). On the extreme left is one of the two Pontalba Buildings, the first apartment houses erected in the United States.

an aggregate capacity of 178,500 tons of freight. One of the units has recently been leased to the Permanent International Trade Exhibition, an exhibit of local and foreign manufactured products maintained for the purpose of increasing domestic and foreign trade.

Uniqueness of New Orleans

Sauntering through the picturesque Vieux Carré on a balmy afternoon, one is conscious of an Old World atmosphere lingering about the place, suggestive of a colorful and romantic past. This Vieux Carré is the original rectangle which was the New Orleans of Bienville's time. The small town lay in a large crescent-shaped bend of the Mississippi River and early became known as the Crescent City. Today, the city includes the double curve made by the Mississippi at that point; and though the whole is still called Crescent City, it may be thought of as old and new Crescent Cities. Canal Street, formerly a deep, narrow canal, divides the old from the new in the city. "Below Canal," in the Vieux Carré, the visitor delights in the narrow streets with the foreign aspect; "above Canal" he shops in the busy canyon-like streets bordered by skyscrapers. In the Vieux Carré his interest is aroused by the uniqueness of the Creole buildings which surround the old central Place d'Armes (Jackson Square), that block of ground now iron-railed, beautiful with verdure, and stately with the famous equestrian statue of General Jackson.

It seems that every important event that occurred in the old city was in some way staged at the Place d'Armes. The St. Louis Cathedral, which stands on the

same plot of ground set aside for ecclesiastical purposes by the founders of the city more than two centuries ago, faces Jackson Square. The Cabildo (the government house of the Spanish régime), separated from the St. Louis Cathedral by a narrow, paved alley, is now a state museum filled with relics of the past. There one finds the gold-framed picture of Bienville, the brocaded-gowns and slippers of ante-bellum beauties, the block from which were auctioned hundreds of negro slaves, and the crystal chandelier that once shed its glittering rays over " fair women and brave men " who danced on the polished floors of the old St. Louis Hotel. On every hand in the Vieux Carré are charming balconies of interesting old architecture and beautiful doorways of curiously wrought iron lace work. Remnants of stately patios (old Spanish courtyards), fragrant with crêpe myrtle, oleander, jasmine, and orange and dense with banana and palm trees, are interesting reminders of former days. In this Vieux Carré, keen eyes may peer into old curio and antique shops, and alert ears may detect in the language of the street such foreign words as " banquettes," " lagniappe," " filé," " piazza," " quartee," and " pralines."

Imagination runs riot in old New Orleans, which clings to its old ideals and ancestral ways. Art lovers from all parts of the world come to depict the charm of the picturesque old French town, its cosmopolitan people, and the glories of the century-old, moss-laden oaks. There is the haunted house, with its story of the cruelties inflicted by Madam Lalaurie upon her wretched slaves. Today this building, known as the Warrington House, is a refuge for homeless men. One may also find the mansion

prepared for the great Napoleon, whom Dominic You was to rescue from St. Helena. The blacksmith shop once kept by the pirate Jean Lafitte may still be seen.

French Market

Of the picturesque characters of the street, the praline vender, who hovers over her basket of pralines, watchful of the street urchins who from time to time try to slip their hands into her basket, attracts due attention. For many years the French Market has keenly interested visitors. Years ago the first market, the Halle de Boucheries, was constructed. About it rose the long low buildings in which a motley crowd of venders now sell their stock of fruits, vegetables, meat, fish, or game. The characteristic noisy hustle and bustle of the place has its own quaint charm. No one can say he really knows

New Orleans if he has not sat at one of the little French Market tables covered with oilcloth, and eaten brown, hot doughnuts and sipped a cup of steaming black French Market coffee.

One should go to Antoine's, also to La Louisiane restaurant, where he may listen to an incessant babble of French while enjoying to the full a generous plate of *gumbo filé*, the rich thick gumbo to which only a real Creole cook can give the genuine Creole flavor. Surrounded by the European atmosphere which still clings to the old restaurants, one might well ask, "Can this be America?" He realizes then why New Orleans is called the Paris of the West.

Bienville provided for a cemetery when the city was first laid out. Today numerous cemeteries are set apart in the city and its suburbs. Just beyond the street that marks the ancient rampart of the Vieux Carré is the second old St. Louis Cemetery. Its marble and white-washed brick tombs and sculptured homes of the departed make it indeed a "city of the dead." Within one of the ancient mausoleums rests all that is mortal of La Salle. Strangers find the tombs in the New Orleans cemeteries very interesting. New Orleanians do not bury their dead beneath the ground. The coffins are placed within vaults, each of which is a miniature mausoleum.

In the midst of the old St. Roch Cemetery stands the small weather-beaten St. Roch's Chapel. The story of the origin of this chapel is one of the many legends dear to the heart of New Orleans. It is said that during the yellow-fever epidemic of 1866–1867, Father Thevis vowed that if none of his parishioners succumbed to the dread

A New Orleans Cemetery
The graves are decorated for All Saints' Day.

disease, he, in thanksgiving, would erect a chapel with his own hands. As the epidemic did not cause the death of any of his congregation, the old pastor built the chapel and called the place "Campo Santo," or "Holy Field." The little chapel has become famed as a shrine where miracles have occurred. Today one may see the many votive tablets and crutches heaped around the altar, expressive of the gratitude of the infirm who have prayed at St. Roch's and been healed. Of course, there are many legends connected with the place. It is believed that if a young woman prays in the chapel every evening the man she loves will lead her to the altar before the year

The Peristyle at New Orleans City Park

is out. And if a maid looks in the well at St. Roch's she will see reflected on its smooth surface the face of her future husband. Of course, she must not look into the well when alone.

Though few people realize it, New Orleans has a Chinatown all its own. In one part of the city, Chinese and Japanese curio shops are found. In past years, there were many Chinese laundries, too; but the modern steam laundry has replaced most of them.

Other Points of Interest

Interesting places are not restricted to the Vieux Carré. Just below the city stretch the plains of Chalmette. There, on January 8, 1815, was fought the Battle of New Orleans, the greatest land battle of the War of 1812. A monument marks the site, and a national cemetery occupies the old battlefield. To the north of the river crescent, at a distance of about seven miles, is Lake Pontchartrain, a beautiful, wide arm of the Gulf of Mexico. West End, with its sea wall and driveways, is an attractive pleasure resort on the lake shore. The Southern Yacht Club, the second oldest in the United States, has an attractive home at the edge of the lake. Spanish Fort, so named because of an old fortification erected there by the Spaniards to protect the city against an attack from the rear, is now an amusement resort on the lake front. A sea wall along Lake Pontchartrain is in course of construction. A concrete viaduct extending north from the city crosses Lake Pontchartrain. This viaduct, five miles in length, is the longest structure of its kind in the world. A bridge across the Mississippi River and an

auditorium adequate to meet the needs of the city as a convention center are projects of the near future.

Audubon Park, with its two hundred and eighty acres, lies within a bend of the river. It is crossed by magnificent live oak avenues and palm groves. The New Orleans zoo is also there. City Park, in another section of the city, has recently been extended to the shores of Lake Pontchartrain. Points of interest in this park are the handsome Delgado Art Museum and the dueling oaks, beneath whose evergreen branches gentlemen of other days settled their personal disputes with sword or pistol.

Many statues adorn public squares in New Orleans. Some of these works of art are the Jackson Monument; the Lee Monument at Lee Circle; Liberty Monument, erected in memory of the brave members of the White League, to which Louisiana owes her restoration to state sovereignty during the reconstruction period; Franklin Statue; Beauregard Monument; Jefferson Davis, Chalmette, and McDonogh monuments; statues of Margaret Haughery and John Audubon; Confederate monuments; and the monument to General Albert Sidney Johnston.

New Orleans is a city of beautiful homes. The cheerless apartment house, which was first introduced into the United States through New Orleans, is not popular. The people prefer the separate dwelling, whether it be the palatial mansion or the simple bungalow. These homes are usually surrounded by smooth lawns with shrubs, trees, and flowers. A number of large, up-to-date hotels and fine rooming houses furnish ample accommodation for transients or permanent roomers. The many cafeterias and restaurants are renowned for the excellence

GIBSON HALL, TULANE CAMPUS

of their cooking and have charmed thousands of people, including *blasé* globe trotters.

Education is fostered by a well-organized public school system, which includes one hundred and ten public schools. A recent bond issue is making possible the construction of more modern and additional school buildings to meet the growing needs of the city. In addition, New Orleans has a splendid parochial school system of about eighty-eight schools. In private schools, New Orleans is well equipped, there being girls' finishing schools, boys' military academies, business colleges, and specialized schools. For higher education, New Orleans offers unusual opportunities. An excellent normal school is part of the public school system, as is also the trades

school for girls, the Francis T. Nicholls Industrial School. The Isaac Delgado Central Trades School for boys is ranked among the finest institutions of its kind in the country. It is part of the public school system, with a private endowment. Tulane University draws students from all parts of the world to its medical college, its law college, its school of architecture, and its college of engineering. Newcomb College, for girls, is part of Tulane. This school won the grand prize in art at the San Francisco Exposition.

Loyola University is a Catholic institution of exceptionally high standards. The Ursuline Convent is one of the nation's oldest and most celebrated educational institutions. The Baptist Bible Institute is located at New Orleans. Fifteen libraries, one of which has many branches, provide reading facilities to New Orleans and her visitors. Churches, over three hundred in number and of many denominations, attest the tolerant views of the people in religious matters.

A commission form of government, which concentrates responsibility, is in part answerable for the efficient manner in which the city is governed. Four commissioners and a mayor are elected for a term of four years. Soon after the establishment of this form of government the city began to run on a cash basis.

As a part of the progress made by the city, mention must be made of the paving program that is rapidly converting New Orleans into a city of paved streets and avenues. It now has 223 miles of paved streets and 117 miles of granite, macadam, gravel, or shell-surfaced streets. This indicates that, with the work now under

way, the 1800 miles of New Orleans streets will soon all be improved.

An enterprising street railway and light system provides transportation through the wide-spreading town by means of the electric street car and the commodious and elegant bus. The system furnishes power for heat and light in homes and illumination of the city by night.

The fire protection system and the sewerage and drainage systems are municipal projects worthy of a growing city. Two water purification plants, capable of purifying 60,000,000 gallons of water a day, furnish filtered water as pure as that of any city in the world.

The seven ideal golf courses of New Orleans have given it the title, "The Winter Golf Capital of America." The parks and playgrounds afford ample recreation facilities for the children. The lover of hunting and fishing finds a veritable paradise in the woods, marshes, and open waters around New Orleans. The list of game fish, animals, and birds is long. The motorist may find ample opportunity for enjoying the natural beauty of the scenery around New Orleans, because of the hundreds of miles of good roads which now lead to the city. Horse and dog races, regattas and yacht events of the Southern Yacht Club, Mardi Gras festivities, and opportunities for river and ocean trips, all add to the recreational possibilities found in New Orleans. Handsome and widely known theaters afford entertainment at all times. The noted Saenger Theater is said to be ten years ahead of even a city the size of New Orleans.

Numerous clubhouses and buildings of fraternal and social organizations attest the friendly spirit of the Cres-

cent City. This social life of New Orleans reaches its climax in the Mardi Gras, when Rex is king and Beauty is queen. Mardi Gras is only another of the European customs of the city. It was introduced from Paris by the pleasure-loving French settlers. It is interesting to note that Mardi Gras was the day upon which Iberville, in his search for a suitable site for a French settlement in the new country, first entered the Mississippi River.

The Mardi Gras season is not restricted, as many think, to the few short days just before Carnival day. It embraces the time between Twelfth Night and Lent. The festive days from the Thursday to the Tuesday immediately preceding Lent are only the climax of the Carnival season. It is a time of merrymaking and freedom from care. The whole city seems to be bubbling over with laughter and joy. One of the things which make Carnival seem realistic is the custom of pretending that Rex, the king of Carnival, comes from a foreign kingdom. Messages announcing his intended visit are received; and thousands gather at the foot of Canal Street to welcome the merry monarch when he, on his royal yacht, arrives at the port. Upon a gorgeous float he then rides in state to the city hall, where the mayor receives his majesty and presents to him the keys of the city. The glittering street pageants which accompany Rex attract thousands of visitors to New Orleans. On Tuesday, Rex holds sway over the Crescent City; then comes Ash Wednesday with its sackcloth and ashes. Lent with its prayers and fasting has begun, and Carnival is over for the year.

Another day dear to the hearts of New Orleans children is McDonogh Day. On the first Friday in May,

children from every public school in the city gather in Lafayette Square and mass beautiful flowers about John McDonogh's monument, while singing the pretty McDonogh song. John McDonogh was the foremost of the New Orleans public school benefactors.

All Saints' Day, of Catholic origin, is celebrated on the first of November. On this festival, the cemeteries are beautifully decorated with quantities of magnificent flowers, the large handsome chrysanthemum being the most used.

The charivari is a distinctly odd Creole custom which is rapidly dying out now. It consists of a curious mocking serenade given to persons entering into a second marriage.

The *Volksfest*, People's Festival, is held at the Fairgrounds on the last Sunday in May. It is given by the German residents for the purpose of raising funds for the German Protestant Orphans' Home. This festival was introduced from Germany, where the Volksfest is held each spring.

The Independence Day of France, July 14, is still celebrated by the French people of the city. Every year on that day there is a celebration in the city to commemorate the storming of the Bastille, the initial step in the French Revolution.

Thanksgiving Day is set apart for the public offering of thanks to God for the peace and prosperity of the nation, the state, and the city. The children of the public schools bring a Thanksgiving offering to school on the eve of the holiday. These offerings, which may be anything from onions to cake, are collected, sorted,

and given to poor families in the city. Thus the more prosperous share with their poorer neighbors, and all are made happy.

Another custom which shows the liberality of the people of New Orleans is the Doll and Toy Fund. The funds derived from this charitable movement, conducted by the Times-Picayune Publishing Company, are used to buy toys at Christmas time for the children of the poor who would otherwise find empty stockings on Christmas morning.

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CHAPTER XII

OTHER CITIES AND TOWNS

Besides having within her borders the South's largest and most interesting city, Louisiana has several prominent centers of population, of which Shreveport, Baton Rouge, Alexandria, Monroe, and Lake Charles are the most outstanding. In regard to these attention is directed first to the rate of increase in the population of each as recorded by the U. S. Bureau of the Census:

PER CENT OF INCREASE OVER PRECEDING CENSUS

	1860	1870	1880	1890	1900	1910	1920
Alexandria	117.4	−16.6*	47.8	58.9	97.4	98.5	56.2
Baton Rouge	39.0	19.7	10.8	45.6	7.5	32.2	46.2
Lake Charles				310.7	94.1	71.4	14.3
Monroe			6.2	57.3	66.7	88.1	24.2
New Orleans	44.9	13.5	12.9	12.0	18.6	18.1	14.2
Shreveport	26.7	110.4	73.8	49.6	33.7	75.0	56.6

* A minus sign (−) denotes decrease.

A study of the above figures reveals the following facts:

(1) The census years 1860, 1870, and 1890 showed over 100 per cent increase in population for Alexandria, Shreveport, and Lake Charles, respectively.

(2) From 1890 to 1910 Baton Rouge experienced a somewhat irregular growth, while Monroe's rate increased steadily.

(3) From 1900 to 1910 Alexandria excelled in rate of growth but fell in 1920 to a fraction of one per cent below Shreveport.

(4) The per cent of increase in population in New Orleans has been consistently lower than that of the smaller cities. However, a comparison of numbers as given in the Appendix, Table 5, discloses the fact that New Orleans each census year has had in numbers an increase many times that of the smaller cities.

Shreveport

Shreveport (81,300), located in the extreme northwestern portion of the state, is Louisiana's second largest city. It is of historical interest that Shreveport lies in what was once known as the Caddo grant, a tract of land ceded by the Caddo Indians to the United States Government. Several years later Captain Henry M. Shreve, in company with Captain Woodruff of the United States Engineer Corps, succeeded in removing the great Red River raft. A port known as Shreve's Landing was established. At first only a trading post with a few straggling log huts, year by year it added to its population the sturdy Anglo-Saxon stock of Virginia, the Carolinas, and other South Atlantic States. Chartered as "Shreveport" in 1829, it has since grown into a prosperous and attractive city covering twenty-one square miles, with an estimated population of more than eighty-one thousand.

It owes its permanent growth and present stability to four leading interests: agriculture, oil and gas, lumber, and manufacturing. Rich farm lands yield different crops, chief of which is cotton. The city has long been

a large cotton-shipping center for a trade territory which extends throughout North Louisiana and into three neighboring states, Texas, Oklahoma, and Arkansas.

Forests containing hard- and soft-wood trees surround the city and account for the location of many industries in Shreveport. Oil and gas fields to the north, west, and east have been responsible since 1910 for a large portion of Shreveport's growth. During the development period of approximately fifteen years, numerous oil companies have established headquarters in Shreveport; ten large refineries are in active operation.

Among other industries should be mentioned particularly the United States Sheet and Window Glass Company, which ranks among the largest in the nation. There are also large fertilizer plants which ship more than 75,000 tons of fertilizer annually, with a value exceeding $3,000,000.

Shreveport occupies an enviable position geographically, being situated on Red River and also in the crossroads of travel by rail and by highway. Three national highways — the Jefferson and the Louisiana Purchase running north and south, and the Dixie Overland running east and west — together with numerous railways, furnish splendid transportation facilities which make Shreveport the largest receiving, shipping, and distributing point between Kansas City, St. Louis, and Memphis on the north, Houston and New Orleans on the south, and Dallas on the west. Approximately one hundred wholesale and jobbing concerns handle the volume of wholesale trade.

C. E. Byrd High School

The school system, including eight grade schools and a million-dollar high school building, modernly equipped and organized, is highly rated in educational circles. Centenary is a college of approved standing; St. John's and St. Vincent's are two old and excellent Catholic schools; and Dodd College, recently established in Shreveport, is a vocational junior college for girls.

ENTRANCE TO CENTENARY COLLEGE CAMPUS

The strikingly beautiful individual homes are a noteworthy feature as are also the handsome church buildings which are the pride of the people. Some of the outstanding clubs of the state are in Shreveport, among which the Young Men's Christian Association and the Young

Women's Christian Association, especially, are active along broad lines.

An outstanding asset of the city is the State Fair which annually attracts thousands of visitors and assists materially in promoting the extensive agricultural development program of Louisiana.

Baton Rouge

Baton Rouge (45,000), situated on the Mississippi River on the first bluff above the Gulf of Mexico, is the parish seat of East Baton Rouge Parish and the capital of the state.

Although Baton Rouge is many miles from the Gulf, it is an important seaport. Located at the head of deep-water navigation on the Mississippi, the city has constructed modern dock and terminal facilities for handling both river and ocean shipments. Six trunk railway lines radiating in all directions encourage interchange of river, ocean, and railway traffic. The strategic position of Baton Rouge, noted by capitalists, attracted many industries to the city. Among these industries the Standard Oil Company of Louisiana makes by far the greatest single contribution to the wealth of Baton Rouge. The plant, covering 1600 acres and employing about 5000 persons, has a capacity exceeding 100,000 barrels of crude oil per day. This refinery receives a great amount of crude oil and ships its finished products, by deep-draft ocean-going vessels, from its Baton Rouge wharf. Among the newer industries attracted to Baton Rouge by its strategic position should be mentioned a mahogany veneer plant with an investment of $1,000,000 and a chemical

plant valued at approximately $750,000. Other important industries include millwork plants, rice and lumber mills, machine shops, and foundries.

A Classroom Scene, School for the Blind

Baton Rouge offers exceptional educational advantages. The completeness of its educational system is shown by the fact that it is the only city in Louisiana where a child can go from the primary grades through the University free of tuition. Here is located the new and greater State University, about which more is said in Chapter XVII. Other institutions of higher education are St. Vincent's and St. Joseph's academies, and the negro schools, Southern University and Baton Rouge College. Here also are the state schools for the blind

and the deaf. Among other buildings should be mentioned the Hill Memorial Library and the Lady of the Lake Sanitarium, one of the best-equipped hospitals of Louisiana.

Fruit orchards and sugar plantations along the river banks, ante-bellum homes in groves of moss-draped oaks, Spanish and French architecture within the city, all create around Baton Rouge an atmosphere quaint and picturesque. Of outstanding beauty on the river front, and with the appearance of an old Spanish fort or castle flying the American flag from its tower, is the State Capitol, a building unique among state capitols of the Union.

Alexandria

Alexandria (23,433), parish seat of Rapides Parish, is the hub city of Louisiana in both highway and railway systems. Located in the geographical center of the state, it has adopted the slogan, "Alexandria in the Heart of Louisiana." Alexandria is a wholesale and distributing center for twenty-eight parishes into which the city's thirty-seven wholesale dealers ship groceries, drugs, automobile accessories, hardware, plumbing and mill supplies, and oil-well machinery, also furniture, oak flooring, and other building materials, as well as flour, feed, and packing-house products.

Among the many and varied industries of Alexandria, particular mention should be made of the lumber mills, flooring mills, cottonseed oil mills, cotton compresses, foundry and machine shops, railway shops and terminals, bedding factories, a packing house, roofing, brickmaking, and creosoting plants, and a creamery.

Alexandria affords excellent educational opportunities through four grammar schools, the Bolton High School, costing $1,250,000, parochial schools and academy, and

ALEXANDRIA HALL, LOUISIANA COLLEGE

the Louisiana College in Pineville, a sister city across the river from but connected with Alexandria by a toll-free traffic bridge. The State Industrial School for Girls and the State Colony and Training School, an institution for the feeble-minded, are located a short distance from Alexandria. For the education of the colored race in Alexandria there are two public grammar schools and one college. Among other institutions should be noted two homes for orphans, the Masonic and St. Joseph's, and a Carnegie library.

For recreation the city offers four city parks, including a Harmon Foundation, a fresh-water natatorium, tennis grounds, a baseball park, and two beautiful nine-hole golf courses. A zoo is of particular interest to children

and there is a camp equipped with a rest room and cooking equipment for tourists.

Alexandria has excellent facilities for medical treatment. There are located within the city the Baptist Hospital and five privately owned clinics to which come patients from all the central Louisiana parishes. The indigent sick of the city are cared for at a free clinic. Within a few minutes' drive of Alexandria is the popular health resort, Hot Wells, with water testing practically the same as that of the famous Carlsbad Wells. In the pine hills across Red River are located the United States Veterans' Hospital, No. 27, and the State Hospital for the Insane.

Among the municipally owned utilities may be named a motor bus line, a natural gas distributing plant, an electric power plant, and a waterworks system including two concrete reservoirs with storage capacity of 2,300,000 gallons. In this connection should be mentioned the fact that the water from the artesian wells in Alexandria is soft and tests 99.6 per cent pure. The city boasts of one of the best motorized fire departments in the state.

A growing asset of Alexandria is the Central Louisiana Fair, which attracts many visitors each year and assists materially in the promotion of the extensive agricultural development program in Rapides Parish and adjoining parishes.

Monroe

Monroe (22,026), the parish seat of Ouachita Parish, is the largest city in central-north Louisiana. Located on the Ouachita River and surrounded by a large and highly productive area, it has a wide diversity of industries.

To the farmers of the surrounding rich alluvial and upland soils, Monroe is a local market for cotton, corn, sugar cane, hay, oats, soy beans, peas, and peanuts, also potatoes and other truck, fruit, poultry, hogs, cattle, and dairy products.

Yellow pine, cypress, and hardwood forests feed several lumber mills and furnish pulp wood for the Brown Pulp and Paper Mill. Among other industries there are a cottonseed oil mill, a cotton compress, a brick kiln, a pottery plant, and several kinds of wood manufacturing plants

The heads of many wholesale distributing firms, taking advantage of the superior transportation facilities, have located warehouses in Monroe It is here that the Dixie Overland Highway crosses a north and south route through Alexandria to New Orleans Four railroads and the packet service on the Ouachita expedite trade. Monroe's excellent means of transportation, supplemented by locally furnished raw materials and a bountiful water supply, make this a strategic point for manufacturing plants.

The city's recent rapid growth, however, is due mainly to the discovery of natural gas. At present the larger part of the gas produced in the field is used in the manufacture of carbon black. Gas from Monroe has recently been piped to Baton Rouge and New Orleans, and lines now under construction will carry it into states north and east of Louisiana. At Sterlington, not far distant, the Louisiana Power and Light Company's plant converts natural gas into electrical energy and transmits it over high voltage lines to wide areas.

Monroe has two entirely independent systems of schools, the parish and the city. It has churches of many denominations, two hospitals, and attractive public buildings. Here are located the Baptist Orphanage and the State Training School for Boys. Worthy of note is a free municipal bathing pool supplied by a deep salt-water well. Tests made of this water show that it is almost identical medicinally with that of the widely known Hot Springs of Arkansas. Golf, boating, and fishing are other favorite forms of recreation.

Lake Charles

Lake Charles (20,556), the parish seat of Calcasieu Parish, is situated on Lake Charles, an expansion of

Aerial View of Lake Charles

Calcasieu River. It is one of the most attractive cities in the state and is becoming a favored winter resort for Northern and Eastern capitalists who annually enjoy the pleasures offered by the hunting and fishing clubs of the Gulf coast.

The city has many miles of paved streets, several bordered with stately palms. Particularly beautiful is Shell Beach Drive along the water edge which leads to the artistic concrete bridge connecting Lake Charles and West Lake. Along this drive are found many beautiful homes. Locke Park is an interesting site in the city.

Lake Charles owes its wealth largely to the sulphur mines and oil fields which lie to the west and to the large forests of valuable timber (long-leaf pine, oak, ash, magnolia, cypress) to the north. Contiguous farm lands yield rice, corn, potatoes, truck, and fruit.

Through the construction of the Calcasieu Ship Canal, Lake Charles has been made a seaport; by way of the Intracoastal Canal it has inland water connection with points to the east and west. Among the principal exports from Lake Charles may be named rice and rice by-products, lumber, naval stores, cotton, cottonseed cake and meal, steel rails, and scrap iron. Fertilizer is an important commodity in both import and coastwise shipments. The port offers splendid dock, warehouse, and railroad facilities for handling its rapidly growing commerce.

The city's industrial plants include a brick yard, a rice mill, a cotton gin, a tent and awning factory, a fence factory, a sash and door plant, and a mattress factory. Lake Charles has the distinction of having one of the largest rice mills in the world and the only plant in the

United States that manufactures cellulose from rice hulls.

The city has the commission form of government and has recently sold its public utilities to a private corporation. Educational facilities consist of seven grade schools, one high school, and a number of private and parochial schools with an enrollment of more than four thousand students. There are many fine modern buildings, among which may be particularly mentioned the parish courthouse, the city hall, a Masonic Temple, churches of different denominations, yacht and country clubs, a Carnegie library, and a private sanitarium.

Bogalusa

Bogalusa (17,000) is one of the youngest cities of the state, and yet the fastest growing. Where twenty years ago stood a primeval forest of majestic pines, today there is a prosperous city.

The town is located in the center of a vast pine-producing area. Its growth may be attributed largely to the enterprises of the Great Southern Lumber Company. This company has in Bogalusa a lumber mill which for many years has been said to be the largest in the world. The daily capacity of the mill is more than one million board feet. Not only is pine timber manufactured there into the finest lumber, but the redwood trees of California are now being barged to Bogalusa and manufactured into lumber.

There are industries in Bogalusa besides lumbering. Recently several paper companies have been established which manufacture large quantities of kraft paper and

kindred products Other industries of Bogalusa that are more or less the direct outgrowth of its timber resources are creosoting plants, broom handle factories, turpentine works, and furniture manufacturing plants.

Bogalusa, situated in the center of the famous Ozone Belt, has a delightful climate. The progressive citizens of the town have provided excellent educational facilities. Bogalusa boasts of its schools, churches, and homes.

Lafayette

Lafayette (11,198), an agricultural, industrial, and financial center known as the "Hub of Southwest Louisiana," is located in the eastern part of Lafayette Parish. It is the home of the Acadians, noted for their gentleness of manner and devotion to duty.

Lafayette is readily accessible to all parts of the state; it is on the main line of the Southern Pacific Railway, and motor bus lines are operated to all the principal cities of the section over the Old Spanish Trail and the Pershing Highway.

Farm produce, consisting chiefly of cotton, sugar cane, corn, rice, truck, poultry, live stock, dairy products, fruit, and pecans, contributes to the wealth of Lafayette.

Among its industrial plants are a canning factory, rice, sugar, and syrup mills, a lumber mill, two cottonseed oil mills, and two cotton gins. It also has a sash and door factory, a broom factory, and a large brickyard.

Southwestern Louisiana Institute (an arts and science and teacher-training college), three public schools, and four parochial schools, three well-appointed hospitals, and churches of many denominations are located here.

GIRARD HALL
A building for the College of Liberal Arts, Southwestern Campus

The Southwestern Louisiana Fair, held each fall, is participated in by thirteen parishes. It is maintained by the Lafayette Chamber of Commerce and occupies a beautiful thirty-five acre site, part of which lies within the city limits.

MINDEN

Minden (8000) is one of the oldest towns in north Louisiana. In 1935 it will celebrate its hundredth anniversary. Minden has long been known as a city of culture and refinement. Its people are very largely of the old Anglo-Saxon stock interming'ed with German. Two of the first secondary schools of Louisiana were located in Minden, the old Minden Female Academy

and the Male Academy. These institutions were known throughout the state and exerted a fine influence for the educational betterment of north Louisiana.

While Minden still preserves its traditional atmosphere of refinement, it is fast becoming a city of considerable commercial importance. Here are located the shops of the Louisiana and Arkansas Railway. No finer shops than these are to be found in the state.

The city is situated in the center of the largest gas- and oil-producing section in north Louisiana. Because of its unlimited supply of fuel it offers wonderful advantages to industries.

Minden boasts of its well-paved streets and beautiful homes. Its churches are among the strongest in the state and its school system enjoys a fine reputation everywhere. In the near future it will offer to its citizens not only grammar school and high school facilities but those of a junior college as well.

New Iberia

New Iberia (8000), the parish seat of Iberia Parish, is located on the historic Bayou Teche. It is on the main line of the Southern Pacific Railway, is traversed by both the Old Spanish Trail and the Pershing Highway, and has water transportation by way of Bayou Teche, along which are some of the most beautiful plantation homes in Louisiana.

In New Iberia are located a factory for making the famous Tabasco Pepper Sauce and a paper mill which manufactures paper from rice straw. Near the city are the salt mines and the wonderful Wild Bird Refuge.

Ruston

Ruston (5073), the parish seat of Lincoln Parish and one of the highest points in the state, is an agricultural and educational, rather than a commercial, center. Located in good hill land, it is in a fine corn- and cotton-producing section. It enjoys the distinction of having one of the finest herds of Jerseys in the state, individuals from the herd having taken premiums when exhibited in several western fairs and stock shows.

Ruston has a creamery, a brick kiln, a large cotton oil mill, a cotton compress, two large stave mills, and several large sawmills. The city operates its own electric light plant and waterworks system and is also piped for gas. It has churches of four denominations which claim larger congregations, in proportion to the city's population, than can be found elsewhere in the state. On the edge of the town is the Louisiana Methodist Orphanage, maintained by the Methodists of the state and caring for about one hundred and eighty orphans.

The Louisiana Polytechnic Institute, maintained by the state, with an annual enrollment of about fifteen hundred students, is located here. This institution draws students from Arkansas, Louisiana, Texas, and Mississippi.

Natchitoches

Natchitoches (6500'), the oldest town in the state, is the parish seat of Natchitoches Parish. It is situated on both sides of a lake which was once the main channel of Red River, now four miles distant at Grand Ecore.

The town extends about two miles to the pine hills

which skirt it on the west. Quaint and interesting by day with its ante-bellum homes of French and Spanish architecture, the town is particu arly beautiful at night with its many electric lights reflected in the water on either side of a steel bridge spanning the lake. On an attractive site overlooking the water is the home of the Art Colony.

CALDWELL HALL, STATE NORMAL COLLEGE

The rich Cane River soil yields crops of cotton, corn, sugar cane, alfalfa, and Bermuda hay, as well as truck and fruit. This is also an excellent live-stock section.

The chief point of interest at Natchitoches, however, is the State Normal College, occupying a commanding position on Normal Hill and bringing to the town annually more than two thousand students.

Hammond

Hammond (6500), one of the chief commercial centers of the Florida parishes, is advantageously located among the pines of Tangipahoa Parish. It is well known in northern and eastern markets as a shipping point for early strawberries, tomatoes, peppers, sweet potatoes, and all kinds of vegetables.

The town enjoys through service on two main-line railroads, the Illinois Central and the Yazoo and Mississippi Valley. Paved roads radiating in many directions serve the truck farmer and delight the motorist. Hammond has one of the best-equipped fairgrounds in the state.

The school system is modern in every respect. A fruit and truck experiment station is located here. Clear, pure water and exhilarating air make Hammond one of the most healthful cities in Louisiana. Its recreational facilities are exceptional for a town of its size.

Morgan City and Berwick

Morgan City has a population of 5429. Berwick, directly across the Atchafalaya River, has a population of 2000. These cities are supported mainly by four lines of industry: lumbering and allied industries, agriculture, fur-trapping, and sea-food industries. Cypress and tupelo gum trees feed large sawmills and box and toy factories; there are also machine shops and shipyards. Allied with the fishing industry are canning and shell-crushing factories, also a lime plant.

Morgan City ships to other sections millions of cabbage and onion plants for transplanting. This city will profit

by both links, or routes, of the Intracoastal Canal to the Mississippi. It also has a deep channel to the Gulf and two trunk highways, the Pershing and the Old Spanish Trail.

De Ridder

De Ridder (5600), located in the highlands of southwest Louisiana, is the center of trade, business, and industry for a large territory between Shreveport, Alexandria, and Lake Charles.

De Ridder owes its existence and first period of growth to pine and hardwood sawmills and turpentine camps. It has now entered into its second period of development, a transition having been made from the lumbering industry to agricultural pursuits. The surrounding cut-over lands have proved most adaptable for trucking and fruit.

Other thriving towns of north Louisiana are Mansfield, Homer, Haynesville Bastrop, and Lake Providence. In south Louisiana should be mentioned Abbeville, Crowley, Franklin, Houma, Oakdale, Opelousas, Plaquemine, and Thibodaux, as well as Amite, Covington, and Slidell of the Florida parishes (Appendix, Table 6).

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CHAPTER XIII

HEALTH

No state in the Union has made greater progress during the last half century in conserving and improving the health of its people than has Louisiana. Handicapped by certain natural conditions adverse to salubrity, she has so successfully removed or overcome those conditions that today, according to the vital statistics of the Union, Louisiana compares favorably with the other states in all matters relating to health. Control of the mosquito, elimination of the rat as the agent in transmitting the bubonic plague, adequate drainage, installation of sewerage systems in all cities, abundant supplies of pure water, sanitary control of the milk supply, education in public health matters, and general respect for the sanitary regulations of the State Board of Health — these are evidence of the progress of the state and of the awakened public sentiment in health matters.

State Board of Health. The great health agency of Louisiana is the State Board of Health. Always under the leadership of statesmanlike presidents, men eminent in the profession of medicine, and with a membership made up of public-spirited physicians and citizens, the Louisiana State Board of Health has been proved by time to be one of the most valuable and important public bodies of the state. It has promoted public health in a marked degree and has created a civic attitude highly

favorable to the continued improvement of health conditions in the state.

The board is made up of nine members: six physicians, a doctor of dental surgery, an educator, and a registered druggist. It has extensive powers in all matters concerned with public health. While local health matters are under the control and supervision of parish and municipal health boards, the authority of the State Board of Health is supreme in all sanitary rulings that have more than merely local significance.

Following the yellow fever epidemics of 1853 and 1854, a joint State and City (New Orleans) Board of Health was created. The State Board of Health, as now organized, was provided for in the constitution of 1898 and created by Act 192 of that year.

The board employs 140 persons and its annual revenues are $75,000 from the state, $22,000 from the Federal treasury for maternity and infancy work, and fees for inspection of kerosene, gasoline, bottling and ice-cream plants.

The subjugation of yellow fever. For many years after its establishment the joint board was concerned chiefly with measures intended to control or prevent the recurring epidemics of the dreaded yellow fever. Among these measures, maritime quarantine received first attention, as it was known that the disease is of tropical origin. The quarantine station was established on the Mississippi River seventy miles below New Orleans, and the most approved methods of the day were employed in disinfecting incoming steamships. Sprinkling with disinfecting solutions and fumigating were the chief

weapons employed by this board; but inefficiency of the methods used for control and laxity in enforcing regulations resulted in occasional failures, and very serious epidemics occurred again, notably in 1878, when the number of victims in New Orleans alone was 4056; but after 1885 the quarantine measures of the board proved a complete success. The last epidemics of any note, those of 1897 and 1905, probably did not have their origin in maritime navigation or in inefficiency on the part of the quarantine station. In 1900 Doctors Walter Reed, James Carroll, Aristide Agramonte, and Jesse W. Lazear, in a series of brilliant experiments and studies, established the fact that the infected stegomyia mosquito is the causative agent of yellow fever. During the course of the studies Doctor Lazear died a martyr to the great cause, a victim of yellow fever following the experimental bite of an infected mosquito.

This discovery simplified the control of yellow fever and its recurrent introduction into the United States. Excepting the epidemic of 1905, at which time final steps had not yet been taken to control the breeding places of the stegomyia mosquito, Louisiana has been free of yellow fever; indeed, through the beneficence of one of our great humanitarian foundations, the dreadful disease has been almost completely exterminated throughout the world. What man's conquest and extermination of yellow fever means may be judged from the fact that in Louisiana this deadly disease carried off 41,561 victims before it was finally subdued.

Progress in health matters. Not all the energies and activities of the present board or of its predecessor, the

joint State and City Board, have been directed against the yellow scourge. From 1890 to 1897, for instance, the board adopted a complete system of meat inspection, improved the milk inspection service, and established a chemical and bacteriological laboratory.

The fight against malaria. Chiefly as a result of the educational and sanitary work of the state health boards, gratifying results have been achieved in the control of another mosquito-borne disease, malaria, which is communicated by the bite of infected anopheles mosquitoes. From 1881 to 1900 the number of deaths in New Orleans due to this disease was 6294; during the two decades following, from 1900 to 1920, the number dropped to 892 — a reduction of more than 85 per cent, despite a growing population. In 1883 the number of deaths in the Crescent City which were caused by malaria was 212.9 in every 100,000 of population; in 1925 it was 1.7. From 1917 to 1926 the reduction in the death rate from malaria in the state as a whole has been 73 per cent. The significance of such statements is apparent and is the most convincing evidence of the rapid strides that have been made in controlling disease in Louisiana and in making the state a healthful one. Yellow fever and malaria, once the greatest foes to the health of the people, have been subdued and thus barriers to material progress have been removed.

The subjugation of the mosquito as an enemy to health and comfort has, on the initiative of the State Board of Health, been undertaken in twenty-seven communities and five parishes and with such gratifying results that the movement is being extended from year to year.

On January 1, 1928 thirty parishes were employing full-time health officers. The scope of their work comprises such duties as the diagnosis of contagious diseases likely to develop into epidemics, inoculation and other measures to avert epidemics, examination of school children for physical defects, coöperation in the establishment and enforcement of quarantines, and treatment of venereal and other diseases among the indigent.

Health trains. From 1910 to 1917, the State Board of Health operated a health train which visited practically every city, town, and hamlet located on the railroads of Louisiana. The train carried exhibit cars specially equipped for disseminating information regarding health matters; lectures were delivered at every stop; thus the interest in health matters rapidly spread over the state. The number of people who visited this train is estimated at approximately 375,000. So great became the fame and reputation of this Louisiana train that the State Board, responding to many requests, sent it out in a truly missionary spirit to many of the leading cities of the Union.

The new health cars were put into operation March, 1927 and by December 31 of that year had been visited by 83,496 persons.

State sanitary code. By legislative enactment, the compilation of a code of sanitary regulations was made one of the chief duties of the State Board of Health. The code was promptly written and is today a bulwark of strength in public health matters and in controlling the spread of disease. The code as now in force deals with the following general matters: (1) land and maritime

HEALTH TRAIN

quarantine regulations; (2) water supplies, cold-storage plants, slaughter houses, and waste disposal; (3) infectious and contagious diseases; (4) vital and mortuary statistics; (5) vaccination against smallpox; (6) carriage and transportation of persons, freight, and dead bodies, as far as these affect public health; (7) food adulteration; (8) inspection of meats, milk, coal oil, and other articles that may affect public health or safety; and (9) general hygienic regulations covering health matters that cannot be efficiently regulated by local boards.

Other health measures. Besides the preventive, sanitary, and educational work described above, the State

Board of Health engages in many other important activities that concern public health. Among the major achievements and services of the board may be listed these:

a. Collection of 90 per cent or more of the certificates of births and deaths, resulting in the official recognition of Louisiana in the official registration area.

b. Supervision of water supplies; inspection of construction designs for such supplies; advice in operation of water-treatment plants; bacteriological analysis of public and private water supplies; and laboratory service in regard to sewage and waste disposal.

c. State-wide sanitary inspection of dairies, bakeries, restaurants, hotels, and public buildings, and help in the adoption by municipalities of the standard milk ordinance recommended by the United States Public Health Service.

d. Systematic collection of morbidity reports, weekly issues of such reports, and weekly letters on pertinent health subjects.

e. Publication of monthly bulletins for school children, and of almanacs, informational leaflets, and quarterly bulletins for general distribution.

f. A program of hygiene for school children, including dental service; prenatal instruction and maternal and infant educational service, including the weighing, measuring, and examination of infants and children of preschool age, and the instruction of midwives.

g. Free distribution of biologicals for school children and indigent persons (for sale at cost to others).

h. Establishment of four branch laboratories besides the main laboratory in New Orleans.

i. Organization of full-time health units in thirty parishes.

j. A systematic program of prevention and control of venereal diseases.

k. A vigorous campaign against the sale of so-called patent remedies and poisons by unlicensed vendors, through educational propaganda and censorship of medical advertisements in the press.

Health in Louisiana compared with other states. The best standard by which to measure the health of a state is its death rate. The record of deaths is officially promulgated by the United States Government for all states comprised in what is known as the official registration area of the country. To be included in the registration area a state must collect and report to the United States Public Health Service not less than 90 per cent of the births and the deaths occurring annually within its territory (Appendix, Table 35). Louisiana has been officially recognized as part of the registration area for births and deaths; hence it is possible to compare the death rate in Louisiana with that of the other states in the registration area, of which there were thirty-nine in 1924.

The death rate from 1919 to 1924 in each of the states within the registration area is given in the table on page 268 from the Statistical Abstract of the United States, 1925.

A brief study of the table will reveal the following facts:

a. That Louisiana's death rate occupies a median place among the states.

b. That Louisiana has a death rate consistently lower

DEATH RATE PER THOUSAND IN THE REGISTRATION AREA

	1919	1920	1921	1922	1923	1924
California	13.7	13.6	13.2	14.1	14.3	14.5
Colorado	12.9	14.5	12.4	13.5	12.4	12.5
Connecticut	13.3	13.6	11.4	12.0	12.0	11.3
Delaware	15.5	14.6	13.1	13.2	14.0	13.0
Florida	12.4	13.0	11.8	12.2	13.5	12.9
Georgia	—	—	—	10.4	11.3	11.5
Idaho	—	—	—	8.1	7.1	7.9
Illinois	12.0	12.6	11.1	11.3	12.0	11.2
Indiana	12.7	13.4	11.9	11.9	12.9	12.2
Iowa	—	—	—	—	10.3	9.8
Kansas	10.8	11.4	10.2	10.6	11.0	9.9
Kentucky	12.8	11.8	10.5	10.8	11.9	10.8
Louisiana	12.9	11.9	11.0	11.3	12.1	13.1
Maine	14.6	15.4	14.0	14.7	15.0	13.8
Maryland	15.3	14.7	13.6	13.6	14.7	13.8
Massachusetts	13.6	13.8	12.2	12.8	13.0	12.0
Michigan	12.6	13.9	11.6	11.3	12.4	11.6
Minnesota	10.5	10.7	9.4	9.5	10.1	9.7
Mississippi	12.7	12.3	11.1	10.8	11.4	11.8
Missouri	11.8	12.5	10.8	11.2	12.2	11.7
Montana	10.7	9.5	8.2	8.6	8.0	7.9
Nebraska	—	10.0	9.2	9.4	9.5	9.0
New Hampshire	14.7	15.2	13.7	14.6	15.1	14.2
New Jersey	13.1	13.0	11.7	12.2	12.3	11.9
New York	13.9	13.8	12.3	13.0	13.0	12.7
North Carolina	12.2	12.7	11.3	11.6	12.0	12.2
North Dakota	—	—	—	—	—	7.6
Ohio	12.7	12.8	11.3	11.3	12.3	11.2
Oregon	11.4	11.7	10.4	11.5	10.9	11.4
Pennsylvania	13.4	13.8	12.4	12.3	13.3	12.3
Rhode Island	14.2	14.3	12.6	13.1	13.8	12.5
South Carolina	13.8	14.0	11.9	12.0	11.8	13.0
Tennessee	12.2	12.1	10.7	10.8	11.9	11.6
Utah	11.0	11.5	10.4	10.4	9.5	10.4
Vermont	14.4	15.7	14.2	14.7	15.2	13.8
Virginia	13.7	13.1	12.2	12.1	12.8	12.0
Washington	10.7	11.1	9.5	10.1	9.7	10.0
Wisconsin	10.7	11.2	10.3	10.1	10.7	10.2
Wyoming	—	—	—	9.3	10.3	9.5

than that of many of the leading states of the Union, including California, Colorado, Connecticut, Delaware, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Virginia, and Vermont.

Louisiana's comparatively favorable death rate in the registration area of the United States is due in part to her mild winter climate and to the comparative freedom of her residents from certain diseases of the respiratory organs which are common in regions where the winters are prolonged and severe.

CHAPTER XIV

FAMOUS MEN AND WOMEN OF LOUISIANA

The famous men and women chosen for consideration in this chapter are those who have done something for the advancement of Louisiana in their various fields of work, whether they were born in Louisiana or lived there only during the years of their service and achievement. The names have been selected with the help of several persons who have had a long acquaintance with the history and people of the state. Because there is a wide diversity of opinion as to greatness, it may occur to many that some names not included should be in the list, and that some that are included might have been omitted. Though numerous men and women now living in Louisiana have rendered and are still rendering great service to their state and deserve recognition, the list of those chosen for consideration in this work has been confined to the illustrious dead.

In a limited space it is obviously more important to stress the greatest accomplishment of each of these men and women than to give detailed biographical data. Only in the case of the best known among them, therefore, has more than a passing mention been made of the main facts of their lives.

In the Field of Education

The history of education in Louisiana includes several men whose work is known outside the boundaries of their own state and many whose fruitful labors have been of the utmost importance in her progress.

Alexander Dimitry (1805–1883). Among the men who have rendered distinguished service to Louisiana in the field of education Alexander Dimitry stands out as a pioneer. As the first State Superintendent of Education he must be given the credit for organizing and putting into operation the public school system of the state. "He was a statesman and a scholar with ideas far in advance of his time," says Superintendent T. H. Harris. As early as 1850 he dreamed of consolidated rural schools. It was one of his hopes that increased funds for public school work would eventually make possible the employment of trained educators as parish superintendents. At that time the office of parish superintendent was elective and was a political position for which special training was not required. The salaries paid these officers were nominal. Dimitry looked forward to the time when the school system of the state would be altogether in the hands of men and women trained for the profession of teaching and when the consolidated rural school would give country children educational facilities equal to those enjoyed by city children. His ideas and ideals have been an inspiration to the able men who have succeeded him in office, and most of his hopes have been realized. Although the legislative appropriation of three hundred thousand dollars for the work of his department was a

comparatively small sum, it was nevertheless a great advance over anything that had been done before.

Dimitry served two terms as State Superintendent of Education (1847–1851), and during the War Between the States he was Assistant Postmaster General of the Confederate States.

William Preston Johnston (1831–1899), a son of Albert Sidney Johnston, was an author and educator. His writings consist of some graceful poetry, a volume of essays on Shakespeare, and a *Life of Albert Sidney Johnston*, which is one of the finest biographies written by an American author. He was, however, preëminently an educator and one of the chief figures in the educational history of the state. For several years he was president of the present Louisiana State University and deserves credit for a fine piece of executive work in connection with that institution. As first president of Tulane University, after its establishment under the gift of Paul Tulane, he showed rare ability and judgment in organizing the institution on a sound basis of scholarship and usefulness.

David F. Boyd (1834–1899) performed his greatest service to the cause of education and the state of Louisiana as president of Louisiana State University after the War Between the States, especially during the troubled days of reconstruction. The legislature at this time was made up of outsiders, generally known as "carpetbaggers," who were unfriendly toward the University. Because of President Boyd's refusal to admit negro students, the legislature refused the University financial support. Despite this the institution was kept open; and when the buildings were destroyed by fire in 1869 the president

arranged for an immediate reopening, transferring the school from the vicinity of Alexandria to Baton Rouge. The history of Colonel Boyd's life is a history of the early years of the University. He was a native of Virginia; he came to Louisiana as a professor when the "Seminary" was first opened in 1860. It was soon closed on account of the war; Sherman, its president, took a command in the Union Army, and Boyd joined the Confederate Army. In 1865 Colonel Boyd reopened the school and devoted himself untiringly to the seemingly hopeless task of reorganization and maintenance. In 1883 he went to Kentucky to become head of the Military Institute of that state and later to Michigan as professor in the Michigan Military Institute. But in 1884 he came back to Louisiana State University and there remained first as a professor and then as president, until his death.

J. W. Nicholson (1844–1917) is known as the inventor of the Trigonometrical Circle and as the author of school texts in mathematics which were used for many years in the public schools. He was the author of a book of Southern tales called *Stories of Dixie* and a contributor to mathematical journals in America and England. Colonel Nicholson was born in Alabama but his parents moved to Louisiana when he was an infant. At the age of sixteen he enlisted in the Confederate Army and after the war his devotion to the study of mathematics led him into the teaching profession. For several years he was associated with the Reverend A. Harris, father of State Superintendent T. H. Harris, in a small but efficient academy which Mr. Harris had opened in Claiborne Parish. From 1877 until the time of his death Colonel Nicholson was

Professor of Mathematics at the State University. For more than ten years of this time he was President of the institution until he resigned in 1898, in order to devote his entire time to teaching. Colonel Nicholson's winning personality and unselfish love of his work made him one of the best beloved men in the state.

W. H. Dalrymple (1856–1925), who was born in Scotland, was before his death one of five men listed by Governor John M. Parker as the five greatest living Louisianians. The reasons for this choice are not hard to find. Doctor Dalrymple was a pioneer in veterinary science in the South. He was also a pioneer in the work of tick eradication and live-stock sanitation. He advocated modern methods of controlling charbon, the establishment of the State Live-Stock Sanitary Board, the establishment of up-to-date abattoirs, and satisfactory methods of controlling rabies. Doctor Dalrymple was the first to demonstrate the value of the use of blackstrap as a food for cattle. He is said to have been at least twenty-five years ahead of his time in the teaching of preventive veterinary medicine.

Doctor Dalrymple was made veterinarian of the Louisiana Experiment Station in 1889. He received honors from many societies and institutions in this country and Europe and was at the time of his death one of the best-known men in his profession.

John McNeese, who was for thirty years Superintendent of the Calcasieu Parish Schools, was a man of broad vision and untiring industry whose skill in organization had much to do with the present high grade of efficiency in the schools of his own parish. His work

in Calcasieu was an example and an inspiration to the rest of the state. Superintendent Harris in his *Story of Public Education in Louisiana* says of Mr. McNeese, "The state owes him a bigger debt of gratitude for his noble, unselfish service than it will ever appreciate."

C. E. Byrd, a graduate of the University of Virginia, was principal of the high schools of Monroe and Shreveport, president of the Louisiana Polytechnic Institute at Ruston, and superintendent of schools in Caddo Parish. His position in the educational history of the state is a permanent one. He devoted his life to creating a sentiment for the education of the masses at public expense.

Hardy H. Hargrove of Shreveport was a newspaper man whose interest in education led him to take a prominent part in several educational movements. He was one of the organizers of the State Teachers' Association and one of the promoters of the Louisiana Chautauqua, two important factors in the educational development of the state. He made a contribution to progressive educational ideas in advocating the graded school system, now so universally adopted that it is hard for the present generation to conceive of a school's being organized in any other way if it has more than one teacher.

In the Field of Philanthropy

It is interesting to note that nearly all the philanthropists whose names have been chosen for discussion were men and women who were born outside of the state, and that many of them were unusually picturesque figures, people of remarkable personality and great public spirit.

Julien Poydras (1740–1824) was born in France, came to this country in his youth, and laid the foundation of his fortune as a peddler, carrying his wares through the country on his back. He finally settled in Pointe Coupée Parish, became active in the affairs of the state, and was elected to represent the Territory of Orleans in Congress in 1809. His journey to Washington was made on horseback. His fortune was a very large one for that day, and a great part of it he bequeathed to charity. One unique bequest was the setting aside of the sum of $30,000 each for the parishes of Pointe Coupée and West Baton Rouge, the income from this money to be used to provide dowries for poor girls. He also left large sums to the Charity Hospital in New Orleans and to a College for Orphans in Pointe Coupée.

Alexander Milne (1742–1838) was born in Scotland. Although he became the possessor of one of the largest fortunes of his time, his eccentricities of dress made him appear a pauper. Dying without direct heirs, he willed almost his entire estate, valued at over $2,000,000, to charities in the city of New Orleans. The estate was immediately involved in litigation and finally the disorders resulting from the War Between the States intervened to prevent the carrying out of the provisions of this will. The largest charitable bequests ever given the city were thus almost entirely nullified. The gifts were for the establishment of orphanages for girls and for boys and an asylum for the poor. The Milne Home for Feeble-minded Girls now exists as one of the beneficiaries of the remaining portion of the Milne fortune.

Judah Touro (1775–1854) accumulated during his

lifetime a fortune of approximately $1,000,000, about one half of which he gave to charity. Touro was of Jewish descent but was equally generous in his contributions to Christian and Jewish charities. He built in New Orleans a synagogue and an almshouse for his own people. He established a public library, founded Touro Infirmary, and gave money to build a Christian church. Born in Rhode Island, he came to New Orleans in 1802; he never thereafter went outside of the city limits except during the Battle of New Orleans, in which he took part and was wounded. One of his eccentricities was that he would never ride in a carriage.

John McDonogh (1779–1850), whose great gift for the establishment and maintenance of free schools for the education of poor children in New Orleans has placed him among the best known of Louisiana's philanthropists, was, like Touro, an eccentric and picturesque figure. He was born in Maryland, but he came to make his home and fortune in New Orleans when he was a very young man. At the height of his career as a business man he suddenly retired to his plantation near the city. Here he lived for the remainder of his days as a recluse and almost as a miser. The money left by McDonogh to the city of New Orleans has built many of its public schools. Besides the amount bequeathed to the schools his will provided a large gift for the orphan boys of the city and another for an asylum for the poor. His greatest pleasure was in his garden of flowers, and in his will he asked that the school children would, in appreciation of his donation, "sometimes plant a few flowers above my grave." This wish is carried out each year when, on

McDonogh Day, the public school children of New Orleans cover the McDonogh monument with flowers.

Paul Tulane (1801–1887), who is best known in Louisiana as the benefactor of Tulane University, was born in New Jersey. Traveling through the South in his youth he met young college students who were forced to leave their native states in order to get a college education. He said, later on, that his chief desire after settling in Louisiana was to see a good college built in the state in order that boys could be educated at home. He went to New Orleans during a yellow fever epidemic in 1822. Unfrightened by this disease he went into business, and his courage and enterprise were rewarded by the accumulation of a large fortune, much of it in real estate. Before the War Between the States, Mr. Tulane went back to New Jersey; there, before his death, he made over his entire property in New Orleans to Louisiana, to be used for the cause of education in the state. By an act of the legislature of 1884 this donation of over a million dollars was set aside " to foster, maintain, and develop a great university in the city of New Orleans, to be known as Tulane University."

Isaac Delgado was a native of Jamaica. Like Milne and McDonogh he lived and died a bachelor. In 1910 he founded in New Orleans the Delgado Museum of Art with a fund of $150,000, and later gave to the city of New Orleans a plantation and $800,000 in cash for a trades school, which has been built and named after the donor.

Isidore Newman (1837–1909) founded the Isidore Newman Manual Training School in New Orleans.

Mrs. Louise Lemonnier Newcomb (1816–1901).

Among the contributions for the advancement of learning in Louisiana are the gifts of three women, the largest of these being the gift of Mrs. Newcomb for the founding of Sophie Newcomb College for Women in New Orleans. Mrs. Newcomb came to New Orleans from Baltimore after her marriage to Mr. Warren Newcomb. When her husband died, he left his entire fortune to his wife and daughter. It was then that Mrs. Newcomb's business ability was shown in the management of the estate which grew to many times its original value. Her beloved daughter, Sophie, died at the age of fifteen, and Mrs. Newcomb gave $100,000 to found a woman's college, in connection with Tulane University, which was to bear her daughter's name. The gift was enough for a small beginning, and another $50,000 was added to it during Mrs. Newcomb's lifetime. At her death she willed the greater part of her fortune, amounting to about $3,500,000, to the Sophie Newcomb College.

Mrs. Ida Richardson, wife of Dr. T. G. Richardson, was the donor of the fund of $100,000 which was used to erect the Richardson Memorial Building for the Medical School of Tulane University. She was also one of the women who gave regular assistance to Miss Sophie Wright's night school.

Mrs. Walter Parrott (Miss Annie Howard) gave the money to build the Howard Memorial Library in New Orleans and a considerable sum to be set aside for the maintenance of the library. These gifts amounted to about $300,000.

Margaret Haughery, known familiarly as "Margaret," was one of the most picturesque of Louisiana's

philanthropists. She was a plain Irish woman, at first a laundress, then the keeper of a small dairy, and finally the owner of a bakery. She shared what she had with the orphan children of New Orleans, first a part of her small wages, then milk from her dairy, and later a daily portion of the product of her bakery. Orphan asylums or stray children were her self-appointed charges, and especially during the dark days of the War Between the States did the orphanages of New Orleans owe their very existence to " Margaret." Living frugally, she accumulated a small fortune which was divided by her will among the orphan asylums of the city. The erection and unveiling of her statue was one of the most dramatic incidents in the history of New Orleans. The figure, in the familiar gingham dress and little shawl, is seated with an arm thrown across the shoulders of a child. Located at the intersection of Camp, Clio, and Prytania streets, the statue faces one of the orphanages in which " Margaret " took so much interest.

In Political Leadership

The varied and unusual history of Louisiana may be responsible for the large number of brilliant men whose names stand out among the leaders in affairs of state. It will be recognized that this has probably been the hardest of all the groups of names to select. The choice has been made with reference to strictly non-partisan service and has been confined to those whose names are most widely known outside of the state as well as inside.

Our space will not permit us to list all the governors of Louisiana; therefore the only ones mentioned are Henry

Watkins Allen, important for his leadership during the War Between the States, Francis T. Nicholls, and Murphy J. Foster, who are included because of their participation in the famous fight against the perpetuation of the Louisiana lottery.

Edward Livingston (1764–1836), a brilliant lawyer and a native of the state of New York, came to Louisiana and was admitted to the bar in 1803. His knowledge of Roman, Spanish, French, and English laws fitted him particularly to practice in Louisiana, whose legal system is a mixture of all. The work upon which the fame of Livingston chiefly rests was a revision of the entire system of criminal law in Louisiana. Though never adopted as a whole, Livingston's *System of Penal Law* was for years used largely in the criminal procedure of the state. Many of its provisions were adopted by other states and by foreign countries.

Henry Watkins Allen (1820–1866) was born in Virginia. He served with honor in the war for Texas independence and in the War Between the States. In the latter service he rose to the rank of Brigadier General. Distinguished as was his army service, it was as war governor of Louisiana that Allen showed his greatest ability. He became governor of North Louisiana in 1864; the southern part of the state was then in the hands of the Federal troops. Allen saw that the salvation of the South lay in her being able to produce her own necessities and he preached to the people the imperative need of producing foodstuffs, making gardens, and manufacturing clothing and medicines. He induced the women to spin and weave and thus ameliorated to some extent the

condition of the people during those dark days preceding the end of the struggle. At the close of the war, when the state passed into the hands of the Federal government, General Allen left Louisiana for the City of Mexico, where he lived in poverty until his death, which occurred in less than a year. His remains were afterwards brought to Louisiana for burial.

Edward Douglas White (1845–1921) was born in Lafourche Parish, Louisiana. He was educated in Maryland, served as a young man in the Confederate Army, at the close of the war studied for the bar, and was admitted to practice in 1868. He served his state in the legislature, in the United States Senate, and on the Supreme Bench. His chief claim to fame was as a member of the Supreme Court of the United States. Judge White's opinions were among the most important ever delivered in that body; of notable importance were those interpreting the Sherman Anti-Trust Law and his dissenting opinion on the Income Tax Law. President Taft, whose party affiliations, religion, and sectional interests were the opposite of Judge White's, appointed him Chief Justice of the Supreme Court of the United States, a signal tribute to the statesman's ability and learning.

Thomas J. Semmes (1824–1899) was born in Georgetown, D. C., studied law at Harvard, established his residence in New Orleans in 1860, and at the outbreak of the War Between the States was elected to the Confederate Senate. He served with credit during the period of the war, was among those adjudged guilty of treason at the end of the struggle, and, after receiving a pardon from President Johnson, returned to New Orleans to

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EDWARD DOUGLAS WHITE

Birthplace of Chief Justice E. D. White at Thibodaux, Louisiana

resume his law practice. He was elected president of the American Bar Association in 1886.

William Wirt Howe (1833–1909) was justice of the Supreme Court of Louisiana and in 1897 president of the American Bar Association. Although he was not a native of the state and came to Louisiana as a mature man, he became a prominent and respected figure in the municipal affairs of New Orleans. He was the author of a *Municipal History of New Orleans* and of a volume entitled *Studies in the Civil Law*, consisting of a collection of lectures delivered in the law schools of Northern universities.

Francis T. Nicholls (1831–1912). In 1877 Governor Francis T. Nicholls was seated as the first governor elected by the native white citizens of the state after the close of the war. Shortly after the Federal troops were withdrawn from Louisiana, Governor Nicholls set about the work of reorganizing the affairs of the state fearlessly and wisely. Ten years later Nicholls was again elected governor and during this term he took vigorous measures to prevent the renewal of the charter of the Louisiana lottery. The victory won by the anti-lottery forces during Governor Nicholls' administration was made complete by the election of 1892 and the choice of Murphy J. Foster as governor.

Donelson Caffery (1835–1906) was one of Foster's advisors during the campaign of 1892, one of the staunch anti-lottery men, and one to whom should go some of the credit for the outcome of this fight. He was United States Senator from 1892 to 1901.

Murphy J. Foster (1849–1901) was elected governor of Louisiana in 1892 on the anti-lottery ticket and was

privileged to sign the act which prohibited the operation of lotteries in the State. He was elected United States Senator to succeed Caffery in 1901.

Edgar H. Farrar (1849–1922) was born in Concordia Parish, Louisiana, and was educated in Louisiana and Virginia. He moved to New Orleans in 1873 and began the practice of law. Here he made a brilliant record as a lawyer. Mr. Farrar and his law partner, Mr. E. B. Kruttschnitt, were prominently identified with the anti-lottery campaign. Perhaps Mr. Farrar's most important service to the state was putting into legal shape the bond plans for the water, drainage, and sewerage system of New Orleans. For much of this work Mr. Farrar is said to have asked no fee. He was president of the American Bar Association in 1910–1911. Mr. Kruttschnitt was president of the constitutional convention of 1898.

In the Field of Social Work

In connection with the social workers of the state should be mentioned the names of one outstanding woman and two eminent New Orleans ministers, whose labors in fields outside of their regular religious work deserve to be recorded.

Sophie B. Wright (1866–1912). The story of Sophie B. Wright deserves much more space than we can give it. In addition to the good which she accomplished, her personal courage in the face of difficulties of every kind is an inspiration. She was born in New Orleans just after the close of the War Between the States. Her family,

accustomed to luxury, had been reduced to poverty by the misfortunes of war. At the age of three she was crippled by a fall and during the remainder of her life she was lame and a great sufferer. She turned to books for companionship. At fourteen she had completed the grammar school course, which was all that the public schools of New Orleans offered at that time. She opened a day school for little children in her own home, charging a tuition fee of fifty cents a month, and from this time on her teaching provided her with the money to pursue her own studies. A chance application for instruction from a young working man was the beginning of the night school which was Miss Wright's life work. Other pupils dropped in. Soon the night school assumed overwhelming proportions. The day school tuition kept the night school going. French, Germans, Italians, and Austrians flocked to her and she had to employ teachers who could understand these languages. The school grew to 300 pupils, 1000, 1500; but by this time she was no longer fighting the battle alone, for rich men and women in New Orleans had become interested and several of them guaranteed a yearly sum for the support of the school. Before Miss Wright's death public night schools were opened all over the city and her school was closed. The Girls' High School of New Orleans was named in her honor, and she received the *Times-Picayune* loving cup, given to the citizen of New Orleans who has performed the greatest service for the city in a given year.

Dr. Benjamin Palmer (1818–1902), a Presbyterian divine, was born in South Carolina but lived in New Orleans from 1856 until the time of his death. He is

principally known for the part he took in the affairs of the state when Louisiana faced two crises in her history. In 1860 he delivered from his pulpit an impassioned address calling upon his people to support the movement for secession. Again in 1890 Doctor Palmer's oratory in opposition to the lottery electrified a gathering of citizens to whom he spoke on the occasion of the organization of the anti-lottery campaign.

Dr. Beverly Warner (1855–1910), an Episcopal clergyman, endeared himself to the people of New Orleans by his helpfulness and courage during yellow fever epidemics. When the epidemic broke out in 1897, Doctor Warner, who was not in New Orleans at the time, returned to the stricken city to give help and comfort to his people; and in the epidemic of 1905 he threw himself into the fight against the mosquito — a fight which that year resulted in conquering yellow fever for all time.

In Military Leadership

To the cause of the Confederacy Louisiana contributed her sons generously. They served in warfare and council. Among many who won military honor we shall consider the following leaders:

Leonidas Polk (1806–1864). General Polk was a clergyman in the Episcopal church, at one time missionary bishop of that denomination in the Southwest District, and later the first Bishop of the Diocese of New Orleans. His knowledge of the topography of the Mississippi Valley led him to make valuable suggestions to President Davis when the war broke out between the states, and Davis offered him a command in the Confederate Army. He

took part in the Battle of Shiloh and was killed during the campaign in Georgia. He established many of the Episcopal churches in Louisiana, principally those along the Red River and on the Bayou Teche and Bayou Lafourche.

Braxton Bragg (1817–1876). General Bragg was a soldier in the Mexican War. He was put in command of the Louisiana State Troops in 1861 and, after the death of General Albert Sidney Johnston, was promoted and put in command of the Western Division of the Confederate forces. He was a native of North Carolina and a graduate of West Point. He became a sugar planter in Louisiana and in 1859–1861 was a commissioner of the Louisiana Board of Public Works.

P. G. T. Beauregard (1818–1893) was a native of St. Bernard Parish. He was educated at West Point for the army, and few have had a more distinguished career. He fought with distinction during the Mexican War, and afterwards, as a captain of engineers, he superintended the building of fortifications at Mobile. He was appointed Superintendent of West Point in 1861 but resigned immediately to join the Confederate Army. The first shot of the War Between the States was fired at Fort Sumter under Beauregard's orders. He commanded the Confederate forces at the First Battle of Bull Run and continued in the service until Lee's surrender in 1865.

Richard Taylor (1826–1879), the son of Zachary Taylor, president of the United States, was born in New Orleans. He served with his father in the Mexican War and was made a colonel of a Louisiana regiment when the War Between the States broke out. General Taylor

fought with Stonewall Jackson in Virginia and later returned to Louisiana and recovered the western part of the state for the Confederacy. He is the author of *Destruction and Construction*, a history of the war and the reconstruction days which followed. General Taylor is said to have possessed rare personality and charm. He was well-read, witty, and fascinating. Someone has said, "To dine with Richard Taylor is better than going to a play."

In the Field of Medicine

Out of the fear, the sorrow, and the financial distress caused by the periodical outbreaks of yellow fever in Louisiana during the nineteenth century, there grew an army of investigators in the ranks of the medical men of the state. At that time the medical school of Tulane University was fast taking rank among the best in the country and attracting the most promising young students of medicine in the South. There is, therefore, a long list of names from which to choose the few outstanding ones for which we have space in this chapter. As exact dates of birth and death are hard to secure in reference to most of these physicians, it will suffice to place them in the period between the middle of the last and the beginning of the present century.

Dr. S. E. Chaille, widely known as a yellow fever investigator and an authority in the field of anatomy, was one of the earlier workers. He was for many years Professor of Physiology and Anatomy at Tulane University and Dean of the Medical School of Tulane.

Dr. Marion Souchon was a surgeon and anatomist

of note, known everywhere as the inventor of Souchon's anesthetizer, used in operations of the face and mouth.

Dr. Tobias G. Richardson was also a well-known surgeon and brilliant anatomist, and was for twenty years Dean of the Tulane Medical School. In his memory was erected the Richardson Memorial Building for the Medical School of Tulane.

Dr. S. M. Bemiss was a pioneer in the study of the causes of yellow fever, the author of many papers that appeared in medical journals, and a member of the National Board of Health which operated in New Orleans during the yellow fever epidemics.

Dr. Joseph Jones was a distinguished investigator and a writer of authority. He was a brilliant chemist, especially in the field of physiological chemistry. As president of the State Board of Health he did notable work in connection with the yellow fever epidemics during the last decade of the nineteenth century.

Doctor Jones's work in the field of maritime quarantine and the fumigation of vessels coming from infected ports to New Orleans was, against great odds, carried on to a successful termination by his successor, Dr. Joseph Holt. Doctor Holt abandoned his practice and devoted himself to the fight for the subjugation of yellow fever, with the result that the disease disappeared from New Orleans for many years. The real reason for the efficacy of his methods was not definitely known until the discovery of the transmission of the yellow fever germ by mosquitoes completed the conquest of the disease.

Dr. M. A. Miles, a famous surgeon, bequeathed to

the city of New Orleans the money to erect the Miles Amphitheater of the Charity Hospital.

Dr. A. W. Smythe was the first surgeon to ligate successfully the large artery near the heart. Doctor Smythe's report of this operation was such a modest one that his very genuine claim to fame was not recognized for years. He is especially to be remembered for his management of the Charity Hospital of New Orleans, just after the close of the War Between the States, when the institution was serving humanity under conditions of dire poverty.

Dr. Ernest S. Lewis was one of the most remarkable medical men in Louisiana. For many years a teacher of obstetrics and gynecology in Tulane, he is called, in this part of the South, the father of medical practice in these branches. He practiced medicine in New Orleans for sixty years and was for twenty years a leading spirit in the administration of the New Orleans Charity Hospital.

In Literature and the Arts

The list of famous Louisianians in literature and the arts is not a long one, but it contains the names of a few really great men and women. As an abundance of material is to be obtained from the larger encyclopedias, a brief account of each person is sufficient here.

François Xavier Martin (1752–1846). Among the foremost writers of Louisiana is the lawyer-historian, François Xavier Martin. Although he was born in France and was not a citizen of Louisiana until he reached the age of forty-six, Martin may be claimed by Louisiana as her very own, for as judge of the City Court of the

Territory of Orleans, and later as judge of the Supreme Court of the state, he rendered invaluable legal service to the new state of Louisiana. Martin's most important literary work was a *History of Louisiana*, of which Fortier says, "It occupies a high rank in our literature and is written with French conciseness and clearness." Others speak of it as notable for accuracy but lacking in interest.

Charles Gayarré (1805–1895) was a great historian and probably Louisiana's most famous man of letters. He was born in New Orleans and was the grandson of the sugar planter Étienne de Boré. He was an orator and statesman as well as a writer and historian. During his visits abroad he collected many historical documents which are now among the treasures of the State Library. His *History of Louisiana* is divided into French, Spanish, and American periods of domination. It was written first in French and then rewritten in English. Fortier says, "Gayarré's *History of Louisiana* has placed the author with the great historians of America. The work begins with the romance of the history of Louisiana in which many legends are related in the florid style suitable to the subject. It is unfortunate that Mr. Gayarré should have included his romance of history in the first part of his history of the French Domination. It has led many of his readers to believe that his work is more romance than history. Such is not the case, however. Gayarré's *History of Louisiana* is a valuable book based on original documents examined critically." Besides his history Gayarré wrote novels and plays. He lost his entire fortune during the war, and thereafter made

his living with his pen. His faculties were unimpaired when he died at the age of ninety.

Richard Henry Wilde (1789–1847) was born in Ireland and came to New Orleans in 1843 as the first professor of constitutional law in the University of Louisiana. He died in the yellow fever epidemic of 1847. He is the author of poetry of a higher type than the average. His most famous poem is the one beginning:

> "My life is like a summer rose
> That opens to the morning sky,
> But ere the shades of evening close,
> Is scattered on the ground to die."

Though commonplace in theme the verses are more than ordinarily musical and the poem was the subject of much literary gossip because a friend of Wilde's translated it into Greek and pretended that it was a newly discovered ode from a Greek poet. Whether any Greek scholars were fooled is doubtful, but the public was imposed on and the laugh that arose at its expense made Wilde's poem well known. Wilde's most ambitious work is *Hesperia*, a long poem modeled on Byron's *Childe Harold*. The subjects of the four cantos are: Florida, Virginia, Acadia, Louisiana.

George W. Cable (1844–1925) is a well-known writer of fiction whose stories of the romantic and picturesque life of old New Orleans have won for their author a lasting place in American literature. Cable was a native of New Orleans. He practiced the profession of engineering in his early manhood but was interested in writing, and

his contributions to the New Orleans *Picayune* were so well-received that he soon turned his whole attention to literature. His first novel, *Old Creole Days*, was published in *Scribner's Magazine* and won immediate fame for its author — a fame not wholly enviable in New Orleans, where people felt that they had been caricatured and misrepresented. Cable soon removed to New England, where he was successful in making a good living by his writing and where he made friends with Mark Twain and many leading literary men of the day. Several other stories of Louisiana followed the first volume. Among these, *The Grandissimes* and *Dr. Sevier*, are worthy of special mention. In later life Cable's stories of different scenes and people showed development and added to his fame. Like Martin and Gayarré, he lived to a ripe old age in the full possession of his intellectual faculties.

Alcée Fortier (1856–1914) has left a monument to his name in three volumes of historical and biographical facts about Louisiana, besides a large number of other works on Louisiana history, French literature, and Louisiana folklore. Fortier was for thirty-five years Professor of French at Tulane University. He was an ardent lover of his state with her rich traditions and history. His patriotism and enthusiasm inspired many of her people to study the language and history of their ancestors. He was one of the leading spirits in the Louisiana Historical Society and for many years its president. For much of the information contained in these sketches we are indebted to Professor Fortier's biographies. He received scholastic honors and degrees from several institutions and lectured during summer sessions at the largest uni-

versities in the country. He was born in St. James Parish and spent most of his life in New Orleans.

Louis Moreau Gottschalk (1829–1869) was a composer and pianist of renown. He made successful tours of the principal cities of Europe, America, and South America, giving recitals of his own compositions which were largely founded on plantation and Creole airs of Louisiana. Although not in the first rank of composers, his art owes its success to a freshness and originality of theme and treatment which might have been more fully developed if the artist had not met so early a death. He was born in Louisiana, went to Paris to study at the age of twelve, made his first début in Europe, and died while on a concert tour in South America.

Henry Richardson (1838–1886), one of the most noted American architects, was a native of Louisiana. His training was received in the East and in Europe. Upon his return from Paris he lived in New England and New York and there accomplished his life work. His contributions to architecture are considered worth while and highly original. He designed Trinity Church in Boston and some of the most imposing public buildings of Massachusetts, New York, and Pennsylvania.

James Gallier of New Orleans was the architect of the beautiful French Opera House, built in New Orleans in 1859, and of the city hall, built in 1850.

Sarah Ellis Dorsey (1829–1879). Mrs. Dorsey's claim to literary fame is based upon her excellent *Life of Henry Watkins Allen*. She is probably best known, however, as the person who presented beautiful Beauvoir, her summer home on the Mississippi Gulf coast, to Jeffer-

son Davis and his daughter, Miss Winnie Davis. Davis spent his declining years here, and at his death Beauvoir became a home for Confederate veterans.

Mary Ashley Townsend (1836–1901). Although born in New York, Mrs. Townsend lived in New Orleans after her marriage, and much of her literary work was contributed to the New Orleans *Picayune*. Her poetry had a wide vogue at the time of its publication and is worth reading at the present day. Probably the best known of her poems is "A Georgia Volunteer."

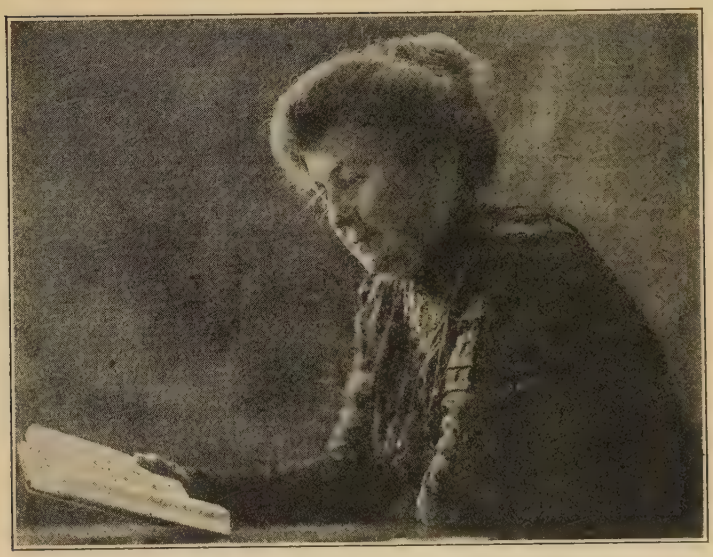
Eliza Jane Poitevant Nicholson (1849–1896) wrote under the name of Pearl Rivers. Her two best-known poems, "Hagar" and "Leah," have a permanent place in literature. Mrs. Nicholson was born in Mississippi. While she was a very young woman, her writing attracted the attention of Mr. Holbrook, the editor of the New Orleans *Picayune*, who invited her to become the literary editor of this paper. She accepted the position, becoming a pioneer in the field of journalism for women and in the world of business. Her business experience came to her as the result of her marriage to Mr. Holbrook, who died soon after the marriage, leaving the management of the paper to his wife. She fell heir to a burden of debt. After considerable labor, she discharged the debt and succeeded in putting the paper on a business basis. In this she had the assistance of her business manager, Mr. George Nicholson, whom she afterwards married.

Kate Chopin (1851–1904) can be claimed by Louisiana without fear of contradiction although she was born and died in St. Louis, Missouri. Married at an early age to Oscar Chopin of New Orleans, she spent several years

in that city and a few years at Cloutierville, Louisiana, in the midst of the French folk of her adopted state. Here she gathered the material for her inimitable stories of French Louisiana, which are thought by many to be superior to those of Cable. It seems indisputable that in sympathetic understanding and faithful reproduction she has given us the best picture we possess of the "bayou folk." Two volumes of short stories entitled, *Bayou Folk* and *Nights in Arcadie*, and her novel, *The Awakening*, are her most important works.

Mollie Moore Davis (1852–1909). One of the best-known newspaper women of Louisiana was Mollie Moore Davis, the wife of Major Thomas Davis, one-time editor of the *Picayune*. Mrs. Davis knew and loved every phase of the Creole life of her adopted city, and her home was one of the centers of New Orleans social and intellectual life. Her negro dialect stories are said to be the first of the kind to appear in print, antedating Irwin Russell's. Her two long stories, *In War Time at La Rose Blanche* and *Jaconetta*, are autobiographical. Dr. Alphonso Smith says that in the short story she achieved her greatest success. She also wrote a quantity of verse, the first volume of which she published at the age of fifteen, and she contributed many critical and biographical sketches to the *Picayune*.

Ruth McEnery Stuart (1849–1917) is probably more widely known than any other woman writer of Louisiana, if we except Grace King and "Dorothy Dix," who are still living. Mrs. Stuart, the daughter of James McEnery and Mary Stirling, was born in Avoyelles Parish and lived in New Orleans most of her life until her



RUTH MCENERY STUART

literary career caused her to move to New York. She filled various editorial positions in that city, the most important being the temporary editorship of *Harper's Bazaar*. Her stories are nearly all in dialect. She wrote of the poor whites of the hill country, of the Latin-American contingent of New Orleans, of the negro, and also of that peculiar type of French negro peculiar to Louisiana. Joel Chandler Harris wrote her, "You have got nearer the heart of the negro than any of us." Doctor Stephens writes, "She is everywhere cheerful, looking on the bright side and turning the flow of her drama away from tragedy toward wholesome living, lightened by the play of comedy." Her many volumes of short stories are still

widely read. Probably the best known of her books is *Sonny*.

Catherine Cole was the pen name of Martha Smallwood, afterwards Mrs. Field. Catherine Cole was another adopted daughter of Louisiana, who in a long newspaper experience so identified herself with the life of the state that she is said to have had a greater knowledge of its resources than any other person of her time. She traveled over Louisiana a great deal, and her brain and pen were always working for the advancement of her state and its people. Mollie Moore Davis, writing of her work, gives to Catherine Cole's influence a large part of the credit for the establishment of the Nurses' Training School, the Woman's Exchange, and the kindergartens of New Orleans. Another chronicler attributes to her column in the *Picayune* the organization of the New Orleans Society for the Prevention of Cruelty to Animals.

Mrs. C. V. Jamison was a writer of delightful stories for children. Her *Lady Jane* was the children's book of the year when it appeared, rivaling *Little Lord Fauntleroy* in popularity.

Eliza Ripley, the author of *Social Life in Old New Orleans*, and Sarah Morgan Dawson, author of *A Confederate Girl's Diary*, deserve mention among Louisiana women who have written interestingly of the past.

Three Unusual Men

John James Audubon (1780–1851). Unique among the famous men of Louisiana was the great naturalist, John James Audubon. His life story is varied and interesting.

Audubon Statue

Though Audubon's family have given different statements about the date of his birth and the place where he was born, many writers record that he was born on May 4, 1780, in Louisiana, where his father, a French naval officer, owned a plantation on the coast near Mandeville. It now appears, however, from papers found in the old home in France, where his childhood and early youth were spent, that he was born on April 26, 1785, at Les Cayes, Santo Domingo (now Haiti). Therefore, Louisiana may no longer claim the bird artist as a native son. He loved birds and he loved to paint, and these two interests made Audubon's work different from that of any other man. His painting teacher was the great French artist David, and his nature teacher the woods and fields of America.

While still a very young man Audubon came back to America, this time to Pennsylvania, took charge of his father's farm there, and spent most of his time in the woods, studying the habits of birds and painting their pictures. These pictures were unusual, for added to the fidelity of the naturalist was the skill of a genuine artist. He married a Miss Bakewell, who lived on a neighboring farm, and whose encouragement and assistance all through his life were invaluable to him. They moved to Kentucky, where Audubon lost his fortune in a business venture, and thence to Louisiana, where they remained during the years Audubon devoted to the completion of his great work. The family resided most of the time in West Feliciana Parish, Mrs. Audubon teaching the children of wealthy planters and Audubon helping to keep the pot boiling by giving painting and dancing lessons.

"OAKLEY"

The plantation home in which Audubon lived while he studied the birds of West Feliciana Parish.

At last his pictures and notes were finished. The publication of such an expensive book became a problem. Audubon took his paintings to England and Scotland and after many discouragements secured enough subscriptions at a thousand dollars each to pay for the publication of the material. The work consists of five volumes of lithographed pictures in color, printed from his beautiful and lifelike paintings of birds. The pictures were accompanied by five volumes of description of the life and habits of the birds. Even at the price of one thousand dollars, which was a great deal of money at that time, the books had a wide sale, but complete sets of Audubon's

Birds of America are now far more valuable than at that time and are very hard to secure.

Audubon later published a similar work on the *Quadrupeds of America*, the material for which was secured by extensive travel in the Northwest. His death occurred in New York on his beautiful estate, now the property of New York State and known as Audubon Park. A society for the protection of bird life in America is known as the Audubon Society.

Étienne de Boré. Another famous name of the period to which Audubon belonged is that of Étienne de Boré, a planter, who in 1794 demonstrated that granulated sugar could be made from sugar cane grown in Louisiana. Before this time good syrup had been made from cane grown in the state, but experienced growers from the tropics did not believe that cane would ripen here sufficiently for the manufacture of sugar. De Boré was so confident of the error of this belief that he staked his entire fortune upon the venture and succeeded in boiling sugar to the granulation point, thus laying the foundation of our great sugar industry.

Paul Morphy (1837–1884). No citizen of New Orleans has ever been accorded more honors than the wonderful chess player, Paul Morphy. Morphy was a student of unusual precocity; as a schoolboy he won so great a reputation for brilliancy of intellect that nothing in the way of mental attainment was considered too difficult for him. At the age of twelve he had defeated most of the chess players of his native city, and at thirteen he surprised the world by taking two games out of three from a famous German champion. After this he was

drawn into tournament after tournament at home and abroad, defeating the best chess players of Great Britain, Germany, and France. His fame became so great that his progress through the country was a succession of celebrations and ovations. America's unbeatable chess player received even more attention than would now be given a champion pugilist.

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CHAPTER XV

NATIVE LANDSCAPE AND WILD LIFE

Contrary to common belief, Louisiana offers great variety of scenery and her landscape is full of delightful surprises. Most of our tourists visit the southern part of the state, view the wide prairies, level rice and cane fields, placid lakes and sluggish streams, and from these form their conception of Louisiana. It is difficult for them to believe that within the boundaries of the state are great ranges of sand hills, with bold outcroppings of sandstone, watered by dashing, sparkling streams, and in the extreme northern part, clay hills as red as "the old red hills of Georgia." This great variation in topography and soils accounts in part for the amazing number of species of trees and plants native to Louisiana.

Forests. Our forests must have been a refreshing sight to the eyes of explorers and early settlers — eyes accustomed only to the perfectly regulated, park-like forests of Europe. At that time, with the exception of prairies and marshlands, the entire state was one unbroken forest, wildly beautiful, and teeming with bird and animal life.

Beginning at the northern boundary and extending in places to within seventy-five miles of the Gulf, magnificent pines covered most of the hills and uplands. These pines were mainly of three species, long-leaf, short-leaf, and loblolly. Over a vast area in the central and western parts of the state, the majestic long-leaf predominated.

A Sand-Hill Creek, Natchitoches Parish

This area included Beauregard, Allen, Rapides, Vernon, La Salle, Grant, Winn, Natchitoches parishes, and parts of several others. In southeastern Louisiana, too, Washington, St. Helena, Tangipahoa, and St. Tammany parshes were forested almost entirely by long-leaf pines. These trees being most intolerant, all other growth was kept choked out, leaving open woods of great beauty. The branches began high overhead and one could see between the clean trunks for several hundred yards, catching glimpses of herds of deer grazing on the lush grasses. Today, most of the pine lands have been cut over, somewhat changing the appearance of the landscape. However, in many places the land is reforesting and these forests of young pines possess a beauty of their own.

In the vicinity of streams, pines become interspersed with hardwoods, then gradually give way until they are entirely replaced by the latter in the lowlands. Here grow giant oaks, sometimes six feet in diameter: white oak, cow oak, water oak, overcup oak, post oak, Spanish oak, and many others. It is stated by botanists that Louisiana may lay claim to twenty species of oak. In a list of trees, the beech deserves special mention, as does the magnolia, famous in song and story. The latter is said to attain its largest size in Louisiana. Other common trees are sweet gum (known commercially as red gum), black gum, bay, maple, linden, ash, hickory, elm, hornbeam, cedar, locust, black walnut, chinquapin, river birch, persimmon, cottonwood, and willow. A most important tree of the rich bottom lands is the pecan. The nuts have been greatly improved by cultivation and the tree is now planted over the entire South. Lou-

Cypress Trees

Note the " knees " which project above the water level.

isiana claims to have the largest pecan tree in the world, at Hohen Solms, near White Castle.

On yet lower ground, in the swamp proper, where water covers the ground for at least a part of each year, the fantastic cypress comes into its own. Fanlike at top and bottom, these trees are built to resist both wind and flood. Strangest provision of all, nature allows their roots to hump up in odd "knees," which project above water level and thus enable the tree to breathe.

Some of the finest hardwoods (broad-leaf trees) are found in West Feliciana Parish. There the interesting and valuable tulip tree grows luxuriantly, one particular specimen measuring nearly ten feet in diameter.

The lumbering industry (in which Louisiana led the entire United States for a short period) has made great inroads into our virgin timber. The long-leaf pine forests, because of their value and convenience in logging, have been almost entirely cut over. Only comparatively small tracts of virgin trees remain.

An area referred to in the geology of Louisiana as the Kisatchie Wold may be taken as an ideal type of the beautiful long-leaf pine country. This great range of hills lies near the center of the state but is sparsely settled, and even yet (1929) the traveler may drive for miles through unbroken forests. In places the scenery becomes wildly rugged, with bowlders and ledges of gray sandstone jutting out from the hillsides. There are many fine springs, and clear streams tumble over their rocky beds and form great banks of snowy sand. The entire area is covered with an almost pure stand of long-leaf pines except in the bottoms drained by the larger streams,

where a luxuriant hardwood growth is found. There is a movement to establish a state park and wild-life sanctuary in this ideal location.

At one time the long-leaf pines seemed threatened with extinction, as they did not reproduce so freely as other species and had a greater number of natural enemies. Now, however, through the efforts of a few forward-looking men, reforestation of southern pines has been put on a sound basis, tried and proved. The pines are coming back.

Our hardwood forests have not suffered so seriously from the inroads of the lumbermen, and they probably never will suffer to so great an extent. The trees are not so uniform in size as the pines, therefore it is not likely that a whole forest will ever be cut at one time.

One type of tree which has not suffered from the ax of the lumberman is the queenly live oak, tree of romance. Its natural habitat is near the Gulf coast, but it has now been planted in almost every part of the state. With glossy evergreen foliage and wide-spreading branches often sweeping the ground, it is justly famous for its beauty. The live oak is closely woven into the history and legends of Louisiana. The Chalmette Oaks, the Evangeline Oak, certain "Dueling Oaks," and others, are pointed out to the tourist.

Live oaks are nearly always draped in long streamers of gray Spanish moss (Tillandsia), which add greatly to their characteristic appearance. In the southern half of the state this moss often grows abundantly on cypress and other trees also.

Along the placid Bayou Teche, the live oak is seen at

its best. Here these trees shelter stately, old-fashioned Southern homes, and shade the grassy slopes down to the water's edge. It is in this locality that the beautiful Longfellow-Evangeline Park is to be established, in commemoration of the poem and its author. The proposed park, which contains many specimens of live oak, consists of about three hundred acres of land along the Teche.

Wild flowers. Louisiana's woods are beautiful at all times of the year. In February the scarlet maple flames out in the swamps and on the hillsides, soon followed by the service berry, snowy wild plum, and redbud. Yellow jessamine vines cover bushes and trees with fragrant golden flowers. By the first of April dogwood is whitening the hillsides, and in some localities the air is fragrant with crab-apple blossoms. Then come the fringe tree, the hawthorn, and the viburnums (black haw, etc.). At the same time every hollow in the sand hills is banked with wild azalea (bush honeysuckle).

Smaller wild flowers grow in great profusion; some of them are very beautiful. There are several species of violet, ranging in size from the tiny, sweet-scented white ones to the big blue bird's-foot violets. Some of the latter have two purple petals, pansy-like. Mandrake, jack-in-the-pulpit, wild phlox, and trillium are other spring favorites. Louisiana has several exquisite native orchids, a fact little known. All during the summer there is a succession of brilliant wild flowers: flaming butterfly weed, white Jersey tea, pink deerweed, marsh pink, partridge pea, deep-red poppy mallow, blue dayflower, sage, larkspur, and many species of the bright yellow sunflower. There are numerous other interesting flowers, some odd,

Dogwood among Long-Leaf Pines

A State Highway through a Virgin Long-Leaf Pine Forest

some lovely, such as foxglove, gerardia, pitcher plant, false dragonhead, and skullcap.

In the hills of Louisiana the autumn coloring is rich and beautiful; with the gold of hickory and beech, the scarlet of maple and sumac, the rich crimson, sometimes shading into purple, of the sweet gum and black gum, nothing is left to be desired. In the autumn the flowers, too, add lovely patches of color to woods and fields. Goldenrod, purple gerardia, and gay-feather gladden the eye. Near the small streams the cardinal flowers lift their flaming spikes of bloom. Almost with the frost come ghostly Indian pipes; and, even as late as the first of December, in sheltered hollows one may find deep blue closed gentians and tiny white asters.

In winter Louisiana's woods are gay with the bright berries of holly, yaupon, dogwood, winterberry, the haws, and other trees, shrubs, and vines. For two months the woods are sweetened with witch-hazel blooms. As a background, there is the rich green of pine, cedar, holly, Southern smilax, and palmetto.

Animals. When settlement first began in Louisiana, the teeming wild life seemed inexhaustible. In the last few years, however, it has become necessary to pass laws protecting many species. Great herds of deer once roamed the woods throughout the state. The rich grasses in the open pine woods afforded splendid summer pasturage, while switch cane and other evergreens in the swamps supplied adequate support through the winter months. Aquatic plants in the numerous bodies of water afforded a sure food supply at almost any time. Even now deer are found in the swamps of the state in

sufficient numbers to lure many sportsmen to these hunting grounds during the open season. When floods occur, however, many of these animals are drowned and, in order to protect those which remain, hunting should not be allowed in these years.

The early settlers not only had venison, but they feasted on wild turkey, woodcock, prairie chickens, squirrel, quail, and occasionally bear steaks. Wild pigeons came in such hordes that branches were broken from living trees which they selected for roosting places. There is not a doubt that many early settlers were drawn to the hill country of Louisiana by the hunting. Of course, they suffered depredations from wolves, panthers, and wild cats, but this seemed not to deter them.

The Louisiana black bear belongs in a class by itself, being a little different from any similar species. While not at all common today, these black bears are found in considerable numbers in dense river swamps. The smaller mammals are still plentiful. Of the squirrels, the handsomest is the fox squirrel, ranging in color from gray and red to black. Rabbits, both the cottontail and the large swamp rabbit, are plentiful and are often used for food in some localities. Raccoons and opossums furnish sport for both negroes and whites, and rare is the hill farmer who does not own a brace of lean hounds for trailing this favorite game. Otters, minks, and beavers have been greatly diminished in numbers by trapping.

Birds. Louisiana is the winter home of thousands of waterfowl. As soon as blizzards drive them from their breeding grounds in the North, they begin flocking into the state. During October and the early part of Novem-

ber numerous flocks pass overhead, and their wild cries may be heard all through the night. We no longer hear so often the stirring calls of wild swans and whooping cranes, which once filled the air during migrations. The Canada goose comes to the state in great numbers; as does also the blue goose, though it is not so well known as the former. The white brant, or snow goose, is rather rare, but it is sometimes seen with other geese. The ducks include mallards, pintails, teals, spoonbills, redheads, canvasbacks, and many other species. The beautiful little wood duck is resident. Nearly all the migrants stop to feed and rest where open water is found, thus giving local hunters the opportunity to bag them in large numbers. The main body of the migration, however, moves on to the marshes along the Gulf coast. Here they gather to fatten on the abundant food, such as wild rice, delta duck potato, and duckweed. Add to the ducks and geese vast numbers of rails, coots, stilts, curlews, and other water birds, and one has some conception of the winter life in the marshes and the unparalleled sport afforded the hunter during the open season.

No state is more richly blessed with small or non-game birds. Audubon first made Louisiana famous for her song birds. Others have made them the theme of song and story, but some of the finest singers have been strangely slighted. Mocking birds are the best known. Meadow larks and thrushes have been lauded in a general way. The cardinal, because of his brilliant color, friendly ways, and sweet notes, is well known. But the exquisite indigo bunting, dainty gnat catcher, and Louisiana water thrush (which is not a thrush, but a warbler) have never

been praised by poets. During spring and summer every woodland and garden has its orchestra. Wrens, orioles, catbirds, bluebirds, wood thrushes, tanagers, wood pewees, and doves, besides those species already named, lend their voices. Most of these birds are also very valuable to the farmer and gardener, for they destroy innumerable insects daily. Other birds — the flickers, nuthatches, chickadees, vireos, woodpeckers, creepers, rain crows, whippoorwills, night hawks, and the many warblers — give valiant service in the age-old war on insects.

Of common Louisiana birds (land birds), the following are resident, that is, they may be found in some part of the state during the entire year: mocking bird, meadow lark, cardinal, wood thrush, bluebird, flicker, blue jay, woodpecker (several species), red-winged blackbird, grackle, shrike (butcher bird), brown thrasher, Carolina wren, chickadee, titmouse, nuthatch (tomtit), gnat catcher, kingfisher, chipping sparrow, field sparrow (and several others), towhee (joree), Maryland yellowthroat, pine warbler, dove, quail, and woodcock (occasional). Of the larger birds, the crow and the turkey vulture (buzzard) are resident and quite common. Of hawks, we have the Cooper hawk (blue darter), red-shouldered hawk, the marsh hawk, and the little sparrow hawk. Around large bodies of water, an occasional bald eagle is found. The common owls are great horned owl, barred owl, barn owl, and screech owl.

Some of our summer visitors which stay with us only during the breeding season are summer tanager, indigo bunting, painted bunting, Louisiana water thrush, rain

crow, chuck-will's-widow, night hawk, martin, oriole (two), chimney swift, humming bird, kingbird, crested flycatcher, wood pewee, bank swallow, and several vireos.

Many of our winter visitors come to us in great numbers, notably robins, blackbirds, juncoes (snowbirds), and several species of sparrow. During this hard season friendly relations seem to be established, several species flocking together in the most sociable way. Of the sparrows, the fox sparrow is the largest but it is seen only in very severe weather. The white-throated sparrow is the most notable, both for his song and his attractive ways. On pleasant winter days he treats us to a few delicious notes of his famous song. Other winter visitants are the tiny kinglet, the house wren, and the myrtle warbler.

From time to time birds from other localities stray within our boundaries, particularly during the periods of migration; but their visits are so brief that we cannot lay any claim to these strangers.

Some of our most beautiful birds are not popular because of their unpleasant habits. The flashing blue jay steals eggs and the young of smaller birds. The hawks are all beautiful, but both the blue darter and the red-shouldered hawk are outlawed because of their inroads on domestic fowls. A marked exception is the charming little sparrow hawk, which feeds chiefly on mice and grasshoppers. The owls destroy a few song birds and occasionally prey on poultry, but they, too, are helpful in that they keep down mice and other destructive rodents. Particularly is this true of the little screech owl, which should be strictly protected.

Wild-life sanctuaries. Private landowners of the state are making valiant and successful efforts to protect and perpetuate wild life. The Great Southern Lumber Company at Bogalusa has a 5000-acre sanctuary, and the Urania Lumber Company a 2000-acre tract. Scattered over the state are many small sanctuaries, which are of inestimable value in giving protection to quail, doves, and the many small land birds during the breeding season and affording them a place of refuge when threatened with extermination by the hunter.

Water birds of many species abound in Louisiana. Along the Gulf, the air is filled with the curving wings of graceful gulls and terns. Pelicans, white and brown, are found in great numbers. Early settlers were so impressed by the pelican that it was used in the design

Pelicans Are Seen in Great Numbers

selected for the state seal. But the great man-of-war bird is the most spectacular of all the birds that inhabit the Gulf region.

Along the shores of bodies of water over the entire state dwell herons, cranes, bitterns, and that oddest of Louisiana birds, the anhinga (water turkey). In the southern part of the state is found the famous snowy egret, the atrocious slaughter of which was one of the most potent forces in bringing about the present protection of bird life in Louisiana. These birds were butchered by the thousands for the exquisite plumes which are borne only during the breeding season. Thousands of young birds were left to starve in the nests. To save the egret from complete extinction, a sanctuary was established in Vermilion Parish by E. A. McIlhenny and C. W. Ward. This project was so successful and attracted so much attention that others followed. Marsh Island was donated to the state by Mrs. Russell Sage, and a great area of marshland in Vermilion and Cameron parishes by the Rockefeller Foundation. In addition to these, the Department of Conservation has supervision of the Rainey Refuge (owned by the Association of Audubon Societies), a tract of 26,000 acres; thus a vast area of nearly 200,000 acres is protected. This great sanctuary project (claimed to be the largest in the world) is no longer an experiment but a proved benefaction. Migratory birds come in increasing hordes, and game in the surrounding country has increased materially. The value of such protection cannot be estimated. It is hoped that by this means other species besides the snowy egret may be saved from extinction.

In 1927 a tract of 81,000 acres of land in Madison Parish was leased from the Singer Company and is under the protection of the Department of Conservation. This will afford a greatly needed refuge for birds and animals in the northeastern part of the state.

Louisiana has one State Forest centrally located (near Alexandria). This forest, which is also a wild-life sanctuary, consists of a tract of approximately 6000 acres of cut-over land that is being reforested. It will be interesting to watch the development of this area, as woods fires will be kept out. Fire is a great destroyer of wild life as well as of forests.

Beauty of waterways. Much of the charm of Louisiana may be credited to her many and varied waterways. The mighty Mississippi and its tributaries form a network of rivers, bayous, and creeks, which are not only beautiful in themselves, but are responsible for the incredibly rich soil of the lowlands of the state.

A boat trip down the Mississippi is an unforgetable adventure. The moving mass of water, the almost tropical tangle of swamps on either side, stretching away for miles in every direction, the strange water birds that pass lazily overhead — all these make a lasting impression.

The Red and the Ouachita rivers have cut deep channels, leaving, in places, great bluffs of vari-colored clays which are very impressive. The bluffs near Columbia on th Ouachita and Grand Ecore on the Red, topped by dark green pines, delight the eye of the tourist.

The Mermentau and the Atchafalaya, which empty into the Gulf, are deep and placid streams until times of

flood, when the Atchafalaya becomes a mighty torrent, carrying off a large part of the surplus water of the Mississippi.

There are hundreds of smaller streams over the state, many of which are attractive. The little Tangipahoa River is charming, with clear water rippling over a pebbly bed and beautiful trees clustering along the banks. Bayous Bœuf, Cocodrie, Black, Dauchite, Kisatchie, Corney, and many others may claim the admiration of beauty lovers and the interest of sportsmen. Black Lake, which is really a bayou for most of its length, is famous for its fishing.

Many of Louisiana's lakes are distinctively beautiful, clear, and deep, and bordered by fine trees. The climate is such that some form of sport like fishing, hunting, boating, or swimming may be enjoyed the year round on these waters. Typical bodies of water are Pontchartrain, Maurepas, Catahoula, Calcasieu, Lake Arthur, White Lake, and Grand Lake. Some of these extend into the marsh region and have only occasional banks, where "cheniers" (live-oak-covered ridges) rise above the marsh.

Cane River, in Natchitoches Parish, is a unique body of water. At one time the main channel of Red River, it had dwindled to a sluggish stream during low water. Enterprising citizens finally succeeded in having it dammed, and it is now an attractive lake about twenty-five miles long. The banks are smooth and grassy to the edge of the clear water, and clumps of vine-hung live oaks, elms, cottonwoods, and sycamores break the curving shore lines. This lake is a bird sanctuary and no gun may be fired on its waters. It is a famous fishing resort.

The Gulf, with its many beautiful bays and its shores teeming with wild life, offers varied delights to the lover of the open. The marshes are an endless paradise to the naturalist. Here, at some time during the year, may be found almost every species of long-legged shore bird and all the swift-winged dwellers of the air.

A boat trip down one of the rivers that empty into the Gulf, and on to one of its many small islands, is a delightful experience. While passing through the marshes, the boat is apt to waken an alligator, which lunges off out of sight in the tall grass. Thousands of oddly colored, long-necked birds fly up out of the marsh grass.

Fisherman's delight. In all the lakes and larger streams of Louisiana, fish abound and some of these grow to great size. Notable among them is the famous Mississippi catfish, which sometimes attains a weight of a hundred and fifty pounds. When one is out in a canoe, it is exciting to have a monster catfish "flounce" close by, showing a flashing glimpse of tail eighteen inches wide and showering the beholder with water. There are several other species of catfish in these waters, most of them game fish and all quite palatable.

Buffalo and "gaspergou" (drum) are large fish that are relished by many; but the most popular of all is the bass, particularly the large-mouth black bass. The latter is very game and delicious in flavor. It grows quite large, sometimes weighing over six pounds. The warmouth, rock bass, white bass (white perch), and yellow bass (barfish) are all popular with the angler. The favorites of the small boy with his switch pole are the pretty and delicious sunfish, or perch. The pike is an

exceedingly game fish, with firm, sweet flesh. It inhabits ponds and small streams.

Fresh-water fish in Louisiana will never be exterminated, for the state owns a fish hatchery at Woodworth, near

Fresh-Water Fish Are Abundant

Alexandria, which keeps the streams of the state well stocked.

If the angler in Louisiana becomes really ambitious, he may venture into the waters of the Gulf, there to try for the famous tarpon. While not strictly a food fish, it offers royal sport to the adventurous. But fishes which are noted delicacies also abound. Pompano, red-snapper, redfish, flounder, sheepshead, Spanish mackerel, sea trout, and bluefish rank high, and many of these are game when taken with a hook. Add to these, crabs,

shrimp, and great juicy oysters, and you have the menu of the wayfarer along the Gulf coast.

Louisiana is justly proud of her wonderful and varied wild life and her beautiful and distinctive scenery, and is making every effort to perpetuate it. Our achievements in the field of conservation have attracted nation-wide attention, and we are adding to these year by year.

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CHAPTER XVI

THE GOVERNMENT OF LOUISIANA

Louisiana governed under constitution. Louisiana is governed under a constitution adopted in 1921. This is the ninth constitution the state has had since its admission into the Union in 1812. It was framed and adopted by a constitutional convention consisting of one hundred and forty-six representatives who met in Baton Rouge. The constitution went into effect on July 1, 1921.

A state constitution is a document which outlines the state government. It is framed by men elected for that specific purpose and cannot be changed without the direct consent of the people. As the government of the state is entirely controlled by the provisions of this document, it is clear that the people not only select their officials but actually control their activities.

Bill of Rights. The first article of our state constitution is a " Bill of Rights," which is a list of rights and immunities that the constitution guarantees to the people against the government and all persons and organizations in the state. Among them are freedom of speech and of the press; religious liberty; the right to life, liberty, and property; security of the home against unreasonable searches; and certain rights to which a person who has been accused of crime is entitled, in order that he may have every opportunity to defend himself. These rights are not merely historical relics; they control the consti-

tution and protect the individual from possible oppression by the government.

Division of powers. By our constitution the powers of government are distributed among three departments: legislative, executive, and judicial.

Legislative department. The legislative power of Louisiana is vested in a legislature, which consists of two houses, the Senate and the House of Representatives. The former is composed of 39 members elected from 33 senatorial districts, and the latter of 100 members elected from the parishes and the wards of the city of New Orleans. The legislature meets in regular session in May every two years. It may be called into special session by the governor and must be called upon the request of two thirds of the legislators elected to each house. Regular sessions cannot last over sixty days. Legislators are elected every four years and receive $10 a day during sessions.

Procedure. Procedure in the legislature is similar to that of other legislative bodies. For a bill to become a law it must pass both houses in identical form and be signed by the governor; if the governor vetoes it, it must be passed by a two-thirds vote of both houses. If the governor fails to act on the bill within ten days after it has passed the legislature, it becomes a law just as if he had signed it. To become effective, amendments to the constitution must pass the legislature by a two-thirds vote in each house and then be ratified by a majority of the electors voting on such proposed amendments at an election.

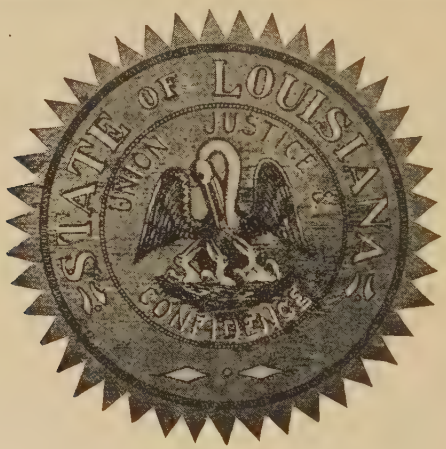
The powers of the legislature are restricted by the

general provisions of the constitution and by certain sections which apply specifically to the legislature. If the legislature passes a law which conflicts with the constitution, it is enforced until someone violates it and is tried for the offense. This brings the law to the official attention of the supreme court, which declares it null and void, and it is no longer a law.

Features. Two provisions in Louisiana attract attention, because they are designed to correct legislative evils long experienced in America. One of these limits the introduction of bills to the first thirty days of the session. This leaves the last thirty days for consideration of the bills and helps to prevent hurried legislation at the close of the session. The other provides for a legislative bureau which examines all bills before final passage and corrects errors in composition and content. Another interesting feature of our legislature is that the House of Representatives votes by machine.

Committee system. As the legislature must act on hundreds of bills during the short time it is in session it would be impossible to give each one careful attention were it not for the committee system. By this system each house appoints a committee for each major subject of legislation, and every bill is referred to one of these committees. The committees, which meet outside of legislative hours, consider the bills and then recommend to the house which they serve the action that they think best in each case. The houses are not compelled to accept the recommendations, but they usually do. This system is an important feature of American government.

Executive department. The executive department consists of eight officers named in the constitution. The principal one of these officers is the *governor*. He is responsible for the enforcement of all laws, is commander-in-chief of the military forces of the state, recommends legislation, has the veto power, may pardon criminals on recommendation of the Board of Pardons, appoints



The State Seal

certain officers by and with the advice and consent of the Senate, and supervises all state departments. He receives a salary of $7500 a year, has the free use of the governor's mansion, and is elected for a term of four years. He may not be elected as his immediate successor.

The *lieutenant-governor* presides over the Senate during sessions of the legislature, and becomes governor in case of vacancy. He receives a salary of $2400 a year.

The *secretary of state* is the custodian of all public records,

keeps the Great Seal, prepares ballots, and performs other duties prescribed by law. The *auditor* keeps the accounts of the state and issues warrants for the payment of state expenses. The *treasurer* receives state money and pays it out on warrants drawn by the auditor. Other officers of this department are the *register of the land office*, the *commissioner of agriculture and immigration*, and the *commissioner of conservation*. These officers, with the exception of the commissioner of conservation, are elected by the people for a term of four years. The commissioner of conservation is appointed for a term of four years by the governor, by and with the advice and consent of the Senate. Each of these officers receives a salary of $5000 per annum.

Judiciary department. The judicial power is vested in a *supreme court*, three *circuit courts of appeal*, *district courts*, and one or more *justice-of-the-peace courts* for each ward. In wards containing not fewer than five thousand persons or at the parish seat, a *municipal court* may replace the justice-of-the-peace court.

The supreme court is the court of last resort in the state. It receives the more important cases which have been appealed from the lower courts, and all cases involving the constitutionality of a law may come before this court.

The courts of appeal consider the less important cases which have been appealed, and thus relieve the supreme court of some of the appellate work. In each court there are three judges.

The district courts are the principal trial courts and have jurisdiction in all except very minor cases. There are twenty-six judicial districts in the state, exclusive

of the parish of Orleans, with one to four judges in each.

In the parishes of Orleans and Caddo there is a *juvenile court* for cases involving children, but in all other parishes the district court tries such cases. There are also other special courts in the parish of Orleans.

The justice-of-the-peace courts may try civil cases in which not over $100 is involved and can make investigations in criminal cases. Municipal courts have slightly greater power. Their principal work is trying violators of municipal ordinances.

Judges elected. All judges, from supreme court justices to justices of the peace, and all district attorneys are elected by the people in the several jurisdictions which they serve.

Department of justice. The *attorney general* is at the head of the Department of Justice, which has charge of all legal matters in which the state is interested. This department also serves as legal advisor to state officials, and has supervision of the district attorneys who are connected with the district courts and who prosecute all offenders in criminal cases.

Parish government. The principal unit of local government in Louisiana is the parish. There are sixty-four parishes in the state; each has a parish seat with suitable buildings for housing parish officials. Most of these officials are elected but a few are appointed. With the exception of the parish of Orleans, the police jury is the principal governing body within the parish. This is a board which varies in size, members being elected from the wards into which each parish is divided. It levies

taxes for parochial purposes and appropriates the money raised, constructs and repairs parish roads, cares for the poor, and elects certain parish officers.

The sheriff is the principal executive officer of the parish. He preserves order and collects taxes for parish and state. The clerk of the district court cares for court matters and records deeds and mortgages. Other officers are the treasurer, coroner, assessor, registrar of voters, superintendent of education, and members of the board of health.

The parish or county idea of local government has always existed in the South, in contrast to the township idea which exists in the New England States.

Municipalities. When people gather within a small area in the parish and desire specialized government, they may incorporate as a municipality. This gives them the power to pass local laws, make contracts, and do other things for the benefit of the community.

There are two forms of municipal government in Louisiana, the *aldermanic* and the *commission*. In the former, ordinances are passed by a council and enforced by a mayor; in the latter, ordinances are both made and enforced by the commissioners, of whom there are usually three or five.

Mayor and councilmen, or commissioners, are elected. Under either form of government a municipal court tries and punishes violators of ordinances; and also under either form a number of officials, such as fire chief, police chief, clerk, treasurer, and comptroller, are appointed to help carry on the work of the government. Salaries vary with the size of the municipality. All municipalities with a population of less than 2500 are governed under the

aldermanic form; those with over 2500 may be governed under either form.

Other local governing units besides the parish and municipality are the levee district, drainage district, school district, and road district, each having supervision over such matters as its name suggests.

Conservation. Conservation work in the state is carried on by the commissioner of conservation, who is appointed by the governor for a term of four years. He enforces the laws against dynamiting streams and seining, and hunting and fishing out of season; stocks streams with fish; plants oyster beds; and in other ways protects and fosters the wild life of the state.

He also directs forestry conservation and employs for this work a trained forester, who enforces forestry laws; he studies and encourages reforestation and educates the people of the state as to the care necessary to prevent forest fires. As part of his program he has placed fire prevention signs on all state highways. A Forestry Board, consisting of the conservation commissioner, the professor of forestry at the State University, two timber owners, and one farm landowner, advises on forestry matters.

Tax Commission. A tax board which was created in 1916 was called the State Board of Affairs. The name was changed in 1921 to the Louisiana Tax Commission. It consists of three members and has charge of the general property tax, which is our principal tax. It is levied at a certain rate per cent on all property, both real and personal, property being valued by the parish assessor and the tax collected by the sheriff. The commission sees

that assessments are uniform, that property which has escaped taxation is assessed, that no favoritism is shown, and that actual cash values of property are ascertained. It values the property of public service corporations directly, which is a big task in itself. The importance of this board is shown by the fact that during the first year of its existence nearly two and a half times as much property was placed on the tax rolls as ever before. The value of property in the state in 1925, as listed by the Tax Commission, was $1,600,000,000. Some of this property is exempt from taxation and the tax on the remainder of it is limited.

In addition to its tax work, the commission prepares budgets of receipts and expenditures for the guidance of the legislature.

Highway Commission. The Highway Commission consists of three members appointed by the governor for terms of six years. It has charge of the construction and maintenance of all state highways, and for this work selects an experienced engineer and a corps of assistants. It also makes and enforces regulations for the safety of traffic on the highways. Our system at present consists of 162 separate routes, and highway work in the state costs about $10,000,000 a year. Part of this is paid by a tax levied on each gallon of gasoline sold in the state, and part by an annual automobile license tax (of $15 and upward) based on horse power.

The highway engineer, in addition to his state work, advises local officials on road problems.

Public Service Commission. The Public Service Commission is composed of three members elected from three

districts. Their work is to supervise, regulate, and control all public utilities except local utilities that have been placed under the control of local units of government. This control is necessary because the public utilities are so powerful that without it they could wrong the individual. In this work the commission in 1925 issued one hundred orders. These orders included such things as allowing railroads to change schedules or discontinue trains, requiring a certain railroad to build a crossing at a designated point, fixing freight rates, and allowing the Shreveport Street Car Company to increase its fares.

Other boards and officers. Many other boards and officers help in the complex work of governing the state. Among these are the Board of Health, Board of Commissioners of the Port of New Orleans, which is improving the facilities of that port and managing its affairs, Board of Charities and Corrections, Supervisor of Public Accounts, and Bank Examiner. One of the modern tendencies is to increase the number and power of these officers and boards, which are usually grouped together and called the "administrative department." They may be considered assistants to the governor.

State school system. The educational system of the state consists of all institutions of learning supported in whole or in part by public funds. At the head of this system is the State Board of Education, which is composed of eleven members. Eight of these are elected, one from each congressional district, and three are appointed by the governor. They receive no compensation except traveling expenses and a per diem of ten dollars during meetings. They meet at least five times each year.

This board has supervision and control of all public schools. It prescribes the qualifications of teachers in the state and issues certificates to qualified persons. It prepares courses of study and makes rules, by-laws, and regulations for the schools. It also supervises all institutions of higher learning, except the State University, over which it has merely visitorial powers, the University being governed by a board appointed by the governor. A *superintendent of education*, who is elected every four years by the qualified voters of the state, is the executive head of the educational system.

Local boards. Working under the State Board are the parish boards and superintendents. The number on a parish board varies but must not exceed sixteen. Members are elected from the wards of the parish, cities being represented in proportion to their population. The members receive five dollars per day when the board is in session and five-cent mileage. They select a parish superintendent of education; receive and spend all school money; submit proposals for special taxes; build and equip schoolhouses; visit schools regularly; and select teachers upon the nomination of the superintendent. The superintendent nominates teachers, supervises their work, signs warrants for their salaries, and is treasurer of school funds.

Voting. Voting is the method by which we select officers to fill the various governmental positions and by which we determine policies of government, such as tax levies and amendments to the constitution.

The privilege of voting is extended to practically everyone in Louisiana who is twenty-one years of age or over,

and who registers and keeps his poll tax paid. Classes barred from voting include criminals, insane persons, certain illiterates, persons who have lived in the state for less than two years, and foreigners who have not been naturalized. To register, a person appears before the registrar of voters for the parish in which he lives and makes a sworn statement as to his name, age, residence, and other qualifications to vote.

The act of voting is simple. A polling place is designated for each community. On the day of the election, each person who comes in gives his name to one of the officials. If this official finds the name on the list of those who have registered and paid all poll taxes required, he gives the voter a ballot. The voter takes this into a booth and marks it as he chooses, folds it so that no one can see for whom he voted, and hands it to the official as he goes out. The official drops the ballot unopened into the ballot box and checks the person's name in order to prevent his voting again at that election.

The right to vote is not only a privilege but, for those eligible, it is a duty. It is the only way in which the average citizen can influence the government and is so important that many people advocate a compulsory vote, that is, passing a law that all who are eligible to vote must vote and, if they fail to do so, are liable to punishment. Such a law will probably never be passed, but certainly everyone who is privileged to vote should exercise the privilege on every occasion.

Louisiana shares in national government. In addition to controlling the state government, citizens of Louisiana have a share in the national government. This consists

in electing two senators and eight representatives to Congress and casting in each presidential election ten of the 510 votes of the electoral college. Other Federal officers are appointed.

Federal courts which touch Louisiana are the Supreme Court, which has jurisdiction over all the states in the Union; the United States Circuit Court of Appeals for the fifth circuit, which meets once a year in New Orleans; and two District Courts, which have headquarters at Shreveport and New Orleans, respectively.

There are many Federal officers in Louisiana, serving as tax collectors, inspectors, police officers, etc.

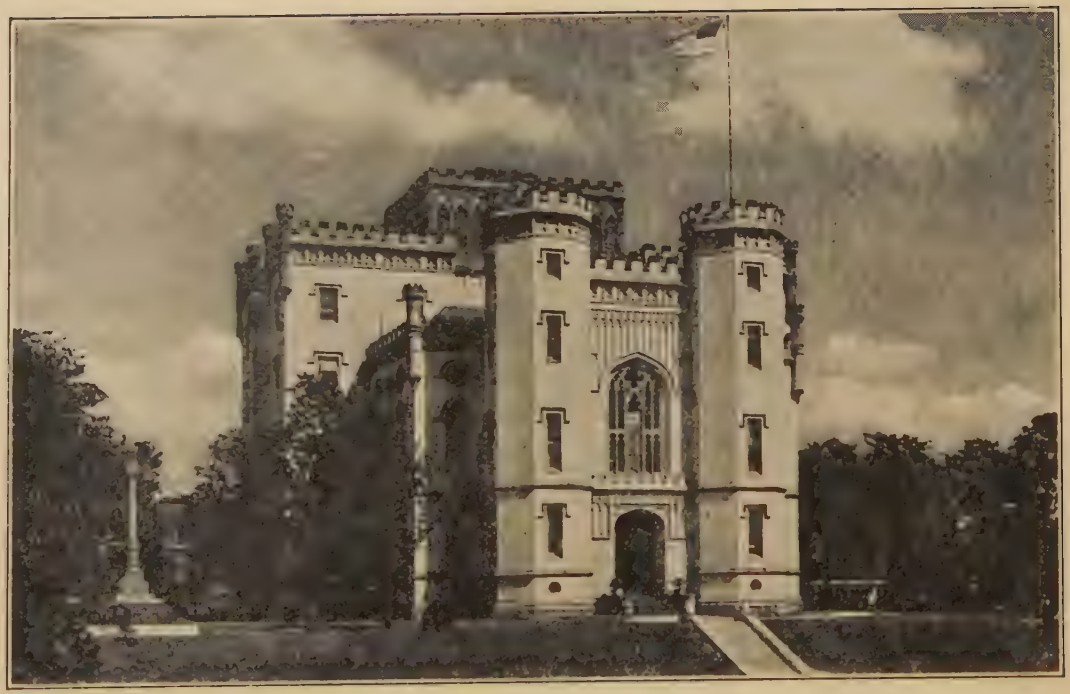
Thus the government of Louisiana, like that of every other state, may be said to be a " wheel within a wheel."

Origin of Louisiana Laws

Louisiana, unlike other states of the Union, is governed by a written code of fundamental law (the Civil Code), prescribing and restricting the actions of its citizens; whereas, in its sister states the common, or unwritten precedent, law is the controlling factor. The Revised Civil Code, as it is called, has very seldom been departed from in seeking a solution to legal problems.

So excellent is this code that it has been retained by Louisiana through four different sovereignties as well as since being admitted into the Union. Its present degree of perfection in form resulted from the correction of defects as they were disclosed by usage.

In the Archives at Paris is still preserved the first legal document prepared on Louisiana soil; there is but little



The Capitol, Baton Rouge

difference in the form of this document and a document executed before a notary in Louisiana today.

The early colony established by Bienville at Biloxi was governed for thirteen years by three officers. The first was a lieutenant of the king, who was in charge of the military and naval affairs; the second was a civil officer, who combined in one the duties of auditor, treasurer, storekeeper, and general manager; the third had charge of ecclesiastical affairs.

Historical records do not indicate the existence of law courts or of a judicial system before 1712. The grant received by Crozat in that year is of the utmost significance, for in it Louisiana received the "Custom of Paris" as its basic law. This is the beginning of Louisiana's civil government.

The laws of Paris, placed in code form in 1510 and revised in 1580, were known as the Custom of Paris. As it had already been administered for a century in France by the Court of the Châtelet, Louisiana was presented with a law and a system of pleading that had already proved its worth.

The grant also freed the colony from the restraints of any other system, be it military, feudal, or perhaps ecclesiastical. The only exception was that ordinances, or edicts, of the king might qualify or repeal, because the king was the sole legislator. This established once for all the French law as the foundation of Louisiana's legal system.

Accordingly, under Crozat's grant, there was established a Superior Council in the colony. This was the first law court in Louisiana. It comprised a lawyer who was the

first counselor, or presiding judge, and an attorney who performed the dual rôle of the people's lawyer and advisor of the government. The remaining members of this body were laymen. Its number could be increased by itself or by royal edict. It had jurisdiction over all Louisiana, which included all the territory claimed by La Salle. The forms of pleading and practice used before the Court of the Châtelet in Paris were followed by the Superior Council. The Custom of Paris, as administered by the Superior Council, was the law of the colony until it was ceded to Spain.

This system prevailed through the administration of the colony by John Law's Company of the West and even until the Spanish acquisition. The ordinance under which the Superior Council operated was in reality a flexible charter, or constitution, minute in detail, but a great deal, including the fixing of costs, was left to the discretion of the judges. This charter was disturbed by only three ordinances, or edicts, of the king, but even those did not materially alter its status. These edicts constitute the first, second, and third judiciary acts of Louisiana, but they are in reality but one law remodeled and reënacted by each succeeding edict.

Besides being the only court in Louisiana, the Superior Council held original civil and criminal jurisdiction in New Orleans. If any actions arose outside of New Orleans, the local post commander acted as preserver of the peace and judge in criminal matters; but in civil matters he was only allowed to take the testimony and transmit it to the Superior Council for decision. The judgment of the Superior Council was final, but we find evidence that

the Council of State at Versailles did at various times exercise the right of review.

Little or nothing is known of the legal history of Louisiana under the Spanish régime. The records of that period have not yet been fully investigated. We do know, however, that with the coming of O'Reilly, a change of government was decreed, the old laws abrogated, and the laws of Spain brought in. Even the official language became Spanish. In 1769 O'Reilly created in two proclamations a "military and political" unit, which was termed the province of Louisiana. In these were promulgated the new rules and codes of laws. This, we know, was beyond his power as "Governor and Captain General of the Province of Louisiana," but his transgression was overlooked and the proclamation subsequently was ratified by the king and his council of the Indies. It thus became the law.

The Provincial Government established by O'Reilly consisted of a corps of officials controlling the commerce of the province and managing its finances. Besides this Provincial Government, whose officials were appointed by the king and who were subordinate to the governor and captain general of Cuba, O'Reilly established in the city of New Orleans a municipal council called a Cabildo. The Cabildo consisted of the governor and six counselors, or regidors, as they were called, who were appointed by him.

O'Reilly's Code was really an abstract of Spanish law and consisted of about ten thousand words divided into six sections; these in turn were subdivided into numbered paragraphs. It covered both civil and criminal law and

also provided a system of pleadings and a method of appeal. Due to the fact that both the French and Spanish laws owe their origin to Roman codes, it is hard to say which of our present provisions came from France and which from Spain. For the principle of the " community of acquets and gains " (page 345), which is of direct Spanish origin, we are deeply indebted to O'Reilly.

Louisiana continued under the Spanish system from 1762 until its cession to the United States. After the surrender by the Spanish to the French so little time elapsed before the French handed Louisiana over to Claiborne that the hiatus was hardly noticeable. However, even after the American acquisition, it was not until a legislative act of 1828 specifically repealed them that the Spanish laws were finally abrogated entirely.

Under the American administration, the Code of 1808 was adopted. This was a compilation by a very learned commission designated by the legislature of Orleans of 1806. This commission had access to the *Progée* of the Napoleonic Code, which itself had not yet been promulgated, even in France, as a completed work.

The *Progée* was an advance copy of the Code Napoléon and although serving as a basis for the Code of 1808, the latter was not a mere copy but a very skilful work. Those who compiled it made full use of all the Spanish and French codes preceding it and likewise of the scholarly treatises by the great French legal writers, particularly those of Pothier, from whom we have our law of contracts. The original Code of 1808 was variously revised, but in 1825 there was an official revision authorized by the constitution adopted in 1812, and the year 1825 saw the

establishment of the Code of Practice. The latter prescribes the forms of pleading and practice and also provides for writs and appeals.

The codes and the statutes are themselves legislative acts and are, of course, subject to change by the same authority that created them. In 1870 a further revision of both codes was made and the Revised Statutes of 1870 were also compiled; these three great works comprise the law of Louisiana today. Their official names are the Revised Civil Code, the Revised Code of Practice, and the Revised Statutes.

These codes, however, do not touch upon any phase of the criminal law, which in Louisiana has the same parentage as that of her sister states, namely, the English common law. This was the only change that the influx of Americans was able to accomplish in regard to the legal system of Louisiana, and it is due to this that we have in the state today the similar system of grand juries and trial by petit juries that exists in neighboring states. The change was brought about by a decree of Claiborne when he became Territorial Governor, in order that peace and safety might be maintained.

Peculiarities. To discuss adequately the many peculiarities and distinctive features of Louisiana law would require volumes in itself. The main outstanding feature of Louisiana civil law is the principle of "community of acquets and gains," to which reference has previously been made. This establishes the inviolable right of both husband and wife to an equal share of all property, real and personal, acquired by them during their marriage, and establishes forever their separate rights to the prop-

erty owned by each of them prior to their marriage, or inherited by them individually during the marriage. The latter is termed separate or paraphernal property.

Although in both the spouses is vested the ownership of the community, yet the husband has control over it during the existence of the community, as far as disposing of or supervising it is concerned. In late years there have been many attempts to alter this status, but at the present writing it has not been changed to any great extent.

Another fundamental provision of the Revised Civil Code is the principle of forced heirship and the equal division of inheritances among children. Parents cannot will away their estate to the detriment of any of their children nor favor any one of them over the others, although disinherison can be invoked, but only for the good and valid reasons set down in the code. These must be specifically announced in the will or act of disinherison.

There are also most admirable provisions dealing with the status of illegitimate children and methods provided for their acknowledgment and ability to inherit which are quite distinctive and individual to Louisiana.

Provisions governing contracts are very rigid, and a noteworthy protection is the illegality, or rather the nullity, of contracts containing potestative conditions. This provision nullifies contracts wherein the performance is dependent purely on the will of one of the parties.

The theory of servitude is also peculiar to Louisiana. This governs the rights one may have over the lands or property of another, as granted by law, for the proper utilization of such property. The servitudes of drainage

or light are illustrations. The servitude of the former is essentially necessary in the agricultural development of the state, and is the vested right of a property holder to have the drainage of his land follow the natural courses, even though it necessitates passing through the land of his neighbor.

Another outstanding peculiarity of Louisiana law is the theory of mortgage. Under the common law, a mortgage is a sale with the privilege of redemption by the mortgagor. Under the Louisiana law, a mortgage is a pledge and if the condition of the pledge, such as repayment of the sum borrowed, or payment of the unpaid purchase price is not fulfilled, court action must be invoked to foreclose the mortgage and enforce the mortgagee's rights. This entails a public sale, after due process, to the highest bidder and, out of the proceeds, the amount claimed is paid, less the costs, to the mortgagee.

In the matter of land tenure, Louisiana permits the transfer of title only in fee simple and forever. This eliminates the question of trusts, so vexing in common law jurisdictions. Any attempt to introduce the principle of trusts, as applied to land tenure, is most vigorously opposed by the true Louisiana lawyer.

There are no equity rules in Louisiana, for the code is so all-embracing that there has been little or no occasion to invoke the principle of equity. Courts resort to the latter only in cases for which there is no specific legal remedy provided. Although the code specifically provides that the principles of equity should be resorted to where there is no substantive law to govern the situation, this has so seldom been invoked in Louisiana that

there does not even exist any equity jurisprudence in the state.

Many other minor peculiarities could be cited, but these are the foremost and fundamental distinctions between the common law and the Revised Civil Code of Louisiana — the lineal descendant of Justinian's *Corpus Juris Civilis* transmitted through the Code Napoléon.

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CHAPTER XVII

EDUCATIONAL AND OTHER INSTITUTIONS

Public School System

Historical. The public schools of Louisiana are today the pride of her people. In quality, adequacy, and permanency of school buildings, in qualification of high school and grade teachers, in professional training of teachers, superintendents, and supervisors, in school consolidation and transportation, in school organization and system of school laws, Louisiana compares favorably with the most advanced states of the Union. In devotion of the people to public education, in educational progressiveness, and in the rapidity of development of an adequate system of public schools, Louisiana yields precedence to no other state.

Although the public schools of Louisiana had their origin in the state constitution of 1845, public education in the state prior to 1900 was extremely limited. While there had been some forward steps, educational progress was painfully slow and the schools were woefully inadequate. The reasons for this slow development are to be found in the poverty of the people, the devastation caused by the War Between the States, the civic disturbance resulting from the era of reconstruction, and the lack of educational leadership. But for these conditions and events, the establishment and development of an ade-

quate system of public schools would probably have been brought about several decades before 1900, when the dreary spell that had hovered over the school system began to lighten.

Returning prosperity and an educational awakening made school progress possible. The state constitution of 1898 had authorized the levying of taxes for the maintenance and operation of the public schools, a right and a privilege not found in earlier constitutions. More able leadership soon came to the front; public opinion responded to the appeals of schoolmen and civic leaders; and by 1905 Louisiana had launched out upon an era of public school development seldom equaled by other states. The first significant step taken in developing the public schools was the professionalizing of the office of parish superintendent. Theretofore the office had paid a salary which was a mere pittance, and hence was filled ordinarily by lawyers, doctors, or small-caliber politicians. Since 1904 the state and parish superintendents have been experienced and professionally trained schoolmen.

Then followed in rapid succession the adoption of meritorious school legislation, the organization of well-rounded parish school systems, more rigid standards of qualification for teachers, increased financial support from the state and from local taxation, the levying of special taxes for building purposes, the adoption of higher salary schedules for superintendents and teachers, the organization of high schools throughout the state, the consolidation of schools and the consequent abandonment of hundreds of one-room country schools, and the inau-

guration of a system of school transportation that rapidly spread throughout the state.

The changes initiated between 1904 and 1908 have continued with increasing momentum. A well-manned and thoroughly organized state department of education helps to inspire and give increased efficiency in all school matters; the training of prospective teachers and teachers in service receives careful attention; state and parish supervisors are employed to aid teachers in developing greater efficiency of instruction; more adequate courses of study are provided for use in the grades and in the high school; more carefully planned and better-built schoolhouses are erected; the high schools grow in number and efficiency; and the enrollment of pupils in the public schools is rapidly reaching toward the maximum.

Organization and administration. The general control of the public schools of Louisiana is vested in the Louisiana State Board of Education, composed of eleven members. Three of the members are appointed from the state at large by the governor for terms of four years. The remaining members are elected for terms of eight years by the qualified electors of the several congressional districts, one from each district, at the congressional elections held in November of even-numbered years, and in such manner that only two members are chosen at each election. Such general policies and acts as the following illustrate the powers and authority of the State Board: the approval of elementary and high school courses of study; the recognition and approval of high schools; the establishment of standards governing the certification of elementary and high school teachers;

Bolton High School, Alexandria

the adoption of public school textbooks and the fixing of their prices; the supervision and final approval of the school census; and the distribution of the general school fund of the state among the several parishes. The State Board also controls the state's institutions of higher learning, Louisiana State University excepted.

The executive officer of the State Board is the State Superintendent of Public Education, who is elected by the voters of the state at the gubernatorial election held every fourth year (leap years). The state superintendent not only executes the orders and resolutions of the State Board of Education, but acts as professional advisor to the Board, submitting his recommendations in writing at each meeting. To the state superintendent, therefore, the people of Louisiana look for the initiation of progressive educational plans and policies and for efficiency in the operation of their public schools.

Within the parish, the final control of the schools rests with the parish school board, whose members are elected from the several wards of the parish. The election of parish board directors occurs at the congressional elections, one third of the members of the board being chosen at each election. While, therefore, both the State Board and the parish boards are organized on an " overlapping " basis, the former operates on an eight-year and the latter on a six-year program. Such powers as the following are vested in the parish school boards: the establishment of new schools; the consolidation of schools; the recommendation of high schools for approval; the appointment and assignment of teachers; the fixing of their salaries; the establishment or extension of school transportation;

the appointment of assistant superintendents or supervisors; the election of the parish superintendent; and the promulgation and general supervision of special school tax elections.

The parish superintendent of schools is the executive officer of the parish board. He discharges a multitude of duties and is largely responsible and held accountable for the state of public opinion regarding school matters within the parish. He selects and recommends for election by the parish board his corps of teachers, advises concerning salary schedules, supervises classroom instruction, inspects school properties and keeps them in proper repair, promotes the erection of adequate school buildings through local levies, acts as school treasurer and determines the general financial policies of the school board, ascertains the financial needs of the schools for operating expenses, fosters the voting of special taxes for such purposes, plans the consolidation of schools, receives and records the teachers' monthly reports, and submits an annual report to the state superintendent.

School revenues. The public school funds of the several parishes are derived from state, parish, and local sources. The general or current school fund of the state is derived chiefly from the following sources: a state-wide tax of two and one-half mills ($2.50 per $1000 of assessed valuation) and the interest on the free (permanent) school fund. This general fund is apportioned by the State Board to the several parishes on the basis of the school census.

The revenues derived from the parish are chiefly these: a parish property tax of three mills, all poll taxes, court fines and forfeitures, and special police jury and municipal

appropriations; also such special parish-wide taxes as may be voted for school purposes.

The chief revenues obtained from local sources consist of special taxes levied either for building purposes or for supplementing the funds available for the maintenance and operation of the schools. Other minor sources of revenue are the interest on funds derived from the sale of sixteenth sections, the proceeds of a state inheritance tax, and (in certain parishes) one third of the proceeds of the state severance tax.

Wallace High School, a Typical Rural School Building

Twenty-five years of school progress. Evidence of the educational progress made in Louisiana during the twenty-five years from 1900 to 1925 is found in the following brief summary:

In 1900 Louisiana had 3102 public school teachers; in 1925 the number was 8577.

In 1900 the number of teachers with college or normal

school training was 931, or 30 per cent; in 1925 it was 5981, or 70 per cent.

During the twenty-five years the number of white children of school age (6 to 18 years) has increased from 204,827 to 358,930.

In 1900 the number of white children enrolled in the public schools was 120,178; in 1925 it was 264,863 — an increase of 120 per cent. In the same time the average attendance increased from 90,662 to 216,572 — an increase of 139 per cent.

In 1900 the length of the annual school session was 120 days; in 1925 it was 170 days.

The value of all public school property in 1900 was $2,150,000; by 1925 it had mounted to $40,799,000 — an increase of nearly 1900 per cent.

In 1905 the state spent $334,000 on school buildings, equipment, and school sites; the amount invested for like purposes in 1925 was $4,894,000.

The number of brick school buildings in 1900 was 40; in 1925 the number had increased to 388.

In 1905 the average value of school property per school was $1522; in 1925 it was $22,282; in 1905 the average value per child enrolled was $25.60; in 1925 it was $154.

In 1900 the total receipts for school purposes were $1,226,000; in 1925 they were $17,038,000. The state school fund increased from $306,000 in 1900 to $3,616,000 in 1925. From local sources the receipts in 1900 aggregated $920,000, while in 1925 they amounted to $15,777,000 (which includes such non-revenue receipts as balances from the preceding year).

In 1900 no revenues were derived from special school

taxes on property; in 1925 the revenues from this source amounted to $5,537,000.

The total disbursements for school purposes were $1,180,000 in 1900 and $20,631,000 in 1925. In the former year, $897,000 was spent on teachers' salaries; in 1925 the teachers received $10,209,000 in salaries.

While the taxable wealth of the state from 1900 to 1925 increased from $553,318,814 to $1,645,427,974, the total expenditures for public education increased from $1,180,000 to $20,631,000 and the per capita expenditures from 85 cents to $11.03.

The number of high schools in 1900 was 32; in 1925 it was 318. In 1900 the high school enrollment was 1481; in 1925 it had increased to 38,694, and the number of high school graduates had mounted from 135 to 5497.

From 1910 to 1925 the number of schools diminished from 2300 to 1831, and the number of one-teacher schools was reduced from 1559 to 593, while the number of consolidated schools increased from 208 to 620.

The number of school transfers operated in 1910 was 210; in 1925 it was 1487, while the number of pupils transported had increased from 4088 to 46,173.

The total illiteracy in Louisiana decreased by 23.9 per cent in the thirty years from 1890 to 1920, compared with a decrease of 7.3 per cent for the nation as a whole. In the same period, white illiteracy decreased in Louisiana from 20.3 per cent to 11.4 per cent, and negro illiteracy from 72.1 per cent to 38.5 per cent.

Colleges and universities. Louisiana provides for the higher education of its youth three universities, twelve standard colleges, and several junior colleges. Training

The Campanile, Louisiana State University

is offered in the usual college courses, in law, medicine, dentistry, pharmacy, agriculture, engineering, commerce, business administration, teacher training, music, art, and home economics; graduate work is provided in the universities; and trade schools offer training in technical and vocational lines in day and night schools.

State Institutions of Learning

Louisiana State University and Agricultural and Mechanical College. Established near Pineville in 1860 as the Louisiana State Seminary of Learning, this institution was transferred to Baton Rouge after the destruction of its plant by fire on October 15, 1869. In 1886 the school was moved from its domicile in the buildings of the present School for the Deaf and Dumb to the United States Army post in the northern part of the city. In 1925 the school was transferred to its magnificent new home on the campus now in use, in the southern suburbs of the city. William Tecumseh Sherman, David French Boyd, William Preston Johnston, James W. Nicholson, and Thomas D. Boyd are the noted educators under whose control the institution grew to its present high rank among the state universities of the nation.

The new plant of the University has been erected from the proceeds of the state severance tax. Governor John M. Parker (1920–1924) led the movement for the establishment and erection of this new plant, which was built from carefully designed and complete architectural plans.

The maintenance and operating funds of the University are derived chiefly from a one-half mill tax on the assessed property of the state, which, however, is not permitted

to exceed $1,000,000. Other sources of revenue are the interest on the seminary fund, certain funds from the United States Government, and special appropriations by the Louisiana legislature for building purposes.

The University is made up of the following colleges and departments: the College of Arts and Sciences, the College of Agriculture, the College of Engineering, the School of Sugar Engineering, the School of Law, the Teachers College, the Graduate School, the Department of Extension, and the Experiment Stations.

The total resident enrollment of college and university students in 1926–1927 was 2548; the enrollment of non-resident students in the divisions of extension and correspondence was 717.

Louisiana State Normal College. Located at Natchitoches on a large and beautiful campus, this institution was established by legislative enactment in 1884, and its first session opened November 1, 1885. In *The Story of Public Education in Louisiana*, Superintendent T. H. Harris says that the establishment of this school was by far the most important one thing ever done in Louisiana in the interest of public education.

As the Louisiana State Normal School, the institution was founded for the sole purpose of training the white youth of the state as teachers for the public schools. The number of trained teachers that have been graduated from the school is now nearly 6000. A large percentage of the high school teachers of Louisiana and more than two thirds of the trained elementary teachers receive their training at this school.

The school is divided into a four-year teachers college,

a two-year normal school, a school of music, a division of extension, and a training school. Curriculums are offered for the training of teachers for all departments of high school instruction and for the elementary school. During the calendar year 1926 the enrollment of resident college students was 2222; and the number enrolled in correspondence and extension classes was 591.

Dr. E. E. Sheib, Thomas D. Boyd, B. C. Caldwell, James B. Aswell, and V. L. Roy have been the presidents of the Normal College. The State Board of Education on February 27, 1929 accepted the resignation of V. L. Roy, effective June 30, and elected as his successor W. W. Tison.

Louisiana Polytechnic Institute. Created by a legislative act of 1894, this school, located at Ruston, opened its doors in the autumn of 1895. Originally an engineering school, the institute now consists of the following schools: Teacher-Training School, School of Engineering, School of Arts and Sciences, and Division of Extension and Correspondence.

The first president of the school was Colonel A. T. Prescott, who was followed by W. C. Robinson, James B. Aswell, W. E. Taylor, C. E. Byrd, J. E. Keeny, and John R. Conniff. The present incumbent is G. W. Bond.

The total resident enrollment of college students in the regular session of the institute for the year 1926–1927 was 882, and during the summer session of 1926 the number was 793. The number enrolled in correspondence study was 68.

Southwestern Louisiana Institute. Founded by Act 162 of 1898 and located at Lafayette, this state school began

its first session, September 18, 1901, with Dr. Edwin L. Stephens as its president.

The school is organized with the following departments: a College of Liberal Arts, a College of Education, and a Division of Extension. During the session 1926–1927, the total college enrollment was 1716, including 469 extension students.

The financial support of this school, like that of the State Normal College and the Louisiana Polytechnic Institute, comes wholly from the state; and its administrative control is vested in the State Board of Education (Appendix, Table 36).

Special schools. The State School for the Blind and the State School for the Deaf are both under the control of the State Board of Education. They are located in the city of Baton Rouge and are provided with physical plants designed to meet their special requirements.

The Louisiana Training Institute for Boys, founded in 1904, is a corrective school located at Monroe and maintained by the state for the training of delinquent boys. The Louisiana Training School for Girls is located near Pineville. These institutions are supervised by special boards appointed by the governor.

Endowed and Denominational Colleges and Universities

Tulane University of Louisiana. The state constitution of 1845 ordained the establishment in New Orleans of the University of Louisiana, which included among other departments the Medical College of Louisiana, founded

in 1834. The school remained under the control of the state, receiving occasional appropriations, until 1884. In that year, following a first donation for endowment of $363,000 by Paul Tulane, complete and permanent control of the institution, thereafter known as the Tulane University of Louisiana, was vested by the legislature in the Board of Administrators of the Tulane Educational Fund. Subsequently, Mr. Tulane increased his donations to the University to the sum of $1,050,000.

The H. Sophie Newcomb Memorial College, which is today the woman's college of Tulane University, was founded as the result of donations made to the Tulane Board by Mrs. Josephine Louise Newcomb in memory of an only child. The productive endowment of Newcomb College is now (1928) $3,023,166.04, while the productive endowment of Tulane University, in all its departments, is $8,982,000.

Tulane University today consists of the following colleges and schools: the College of Arts and Sciences, the College of Engineering, the H. Sophie Newcomb Memorial College for Women, the Graduate School, the College of Law, the College of Medicine, the College of Commerce and Business Administration, the Courses for Teachers, and the Summer Schools. The College of Medicine comprises the Schools of Medicine, Pharmacy, Dentistry, and the Graduate School of Medicine.

The enrollment of Tulane University during the session 1926–1927 was 3972.

Loyola University is a Catholic school, located in New Orleans. Its groups of buildings, whose architecture is of the Tudor-Gothic type, present a striking view on

St. Charles Avenue, adjoining the campus of Tulane University. Its support is derived from tuition fees, donations, and bequests. The university offers classical, scientific, dental, pharmacy, law, and business courses, a marine architectural course, a marine drafting course, and a course in oratory.

Louisiana College, domiciled at Pineville, is a coeducational school under Baptist control. First established at Mount Lebanon in 1853, it was later transferred to its present site, where it was opened in 1906. The college offers courses in the arts and sciences and also pre-medical, pre-dental, and pre-engineering courses.

Centenary College was first opened in Louisiana at Jackson in 1845. It is under the control of the Louisiana Methodist Conference. In 1908 it was moved to Shreveport and made into a coeducational school. The college offers courses in the arts and sciences, a course in religious education, a teacher-training course, and a course in commerce, as well as pre-medical, pre-law, and pre-engineering courses. Many distinguished men of Louisiana and of the South have been students of Centenary. Among these were Jefferson Davis and Judah P. Benjamin.

The *Ursuline College* in New Orleans is a Catholic school for girls, in charge of the Ursuline nuns. Its origin is found in the Ursuline Convent which was opened in New Orleans in 1727, the first convent established within the present boundaries of the United States.

Other colleges in the state include: St. Mary's Dominican College in New Orleans, a standard four-year college for young women, controlled by the nuns of St. Dominic; Mansfield Female College (Methodist) at Mansfield, a

junior college for women; Silliman Institute (Presbyterian) at Clinton, also a junior college for women; and Dodd College in Shreveport, a junior college for women, founded under Baptist auspices and opened in 1927. The Isidore Newman Manual Training School in New Orleans is a coeducational and nonsectarian high school under Jewish control. The Isaac Delgado Central Trades School in New Orleans is a technical school under the control of the Orleans School Board but partly supported by an annual appropriation of $50,000 from the state. The Francis T. Nicholls Industrial School is a similar institution for girls.

Higher Education for Negroes

Southern University and Agricultural and Mechanical College is a state academy and college for negroes which is supported in part by the state and in part by the Federal government as a Land-Grant college. Formerly located in New Orleans, the school was moved in 1912 to a farm of five hundred acres near Scotland, a few miles above Baton Rouge. The college offers normal courses in home economics and courses in vocational agriculture.

Other institutions of collegiate grade designed for the education of the colored youth of the state are Leland University, at Baker, and the New Orleans University, Straight University, and Xavier University — all under denominational control and located in New Orleans.

Hospitals

The Charity Hospital of Louisiana, located in New Orleans, is the largest in the state, the fourth largest

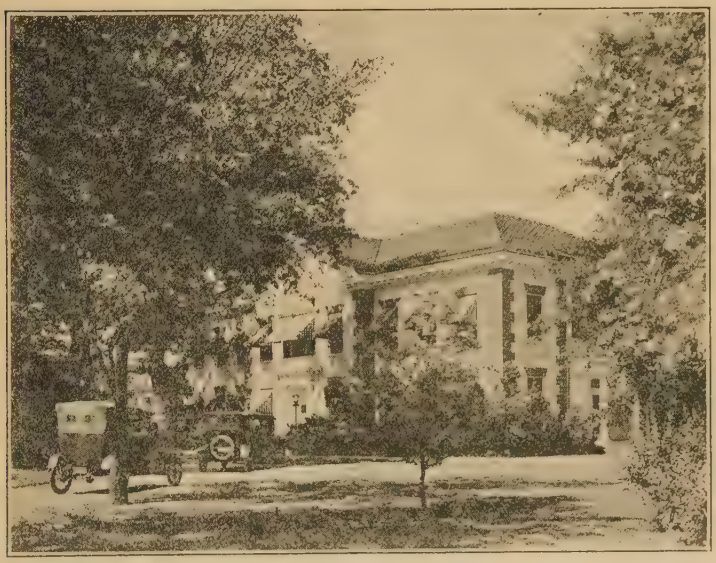
in the country, and the oldest eleemosynary hospital in the Mississippi Valley. Its origin lies in a legacy bequeathed by Jean Louis in 1736. The following year the hospital was opened, and in 1813 it was incorporated as a state institution. The hospital offers free treatment and care to the indigent sick of the state, operates a training school for nurses, and permits the medical schools to teach in its wards and clinics.

The hospital has an equipment of twenty-two buildings, and in 1926 had an average of 1230 patients daily. Its property is valued at $3,208,761.45, and its revenues from the state for the two years 1926–1928 were $1,434,768. From other sources it has an annual revenue of about $100,000.

Shreveport Charity Hospital. Established in 1876 and supported by the state, this hospital serves the same purpose in north Louisiana that the Charity Hospital of Louisiana does in New Orleans and south Louisiana. It has three buildings, and its property is valued at $750,000. It derives a biennial revenue of $225,000 from the state and takes care of about 300 patients daily.

The *Eye, Ear, Nose, and Throat Hospital* is a New Orleans institution, commanding the talent of the best specialists in the city. Here, too, indigent persons are treated without charge. This hospital receives state aid of about $3000 annually.

The *Shrine Hospital for Crippled Children*, located in Shreveport, is one of several similar hospitals maintained and controlled by the Ancient Arabic Order of Nobles of the Mystic Shrine of North America. It receives only orthopedic cases and is operated for the benefit of children



THE SHRINE HOSPITAL FOR CRIPPLED CHILDREN

in Louisiana, East Texas, South Arkansas, and Mississippi whose parents are financially unable to defray the cost of the high quality of medical and surgical service necessary for the care and cure of physically deformed children.

Touro Infirmary, Hotel Dieu, the Presbyterian Hospital, and the Baptist Hospital (New Orleans), the Schumpert Memorial Sanitarium, the North Louisiana Sanitarium, the Highland Sanitarium and the Tri-State Sanitarium (Shreveport), the Baptist Hospital (Alexandria), the Lady of the Lake Sanitarium (Baton Rouge), the St. Patrick's Sanitarium (Lake Charles), the St. Francis Sanitarium and the Riverside Sanitarium (Monroe),

and many other hospitals and sanitariums throughout the state afford the best type of medical, surgical, and hospital attention for those whose financial means preclude their treatment at the eleemosynary hospitals.

Other Institutions of the State

The *East Louisiana State Hospital* for the insane was established at Jackson in East Feliciana Parish in 1847. Prior to that time all mentally diseased persons of the state were cared for in the Charity Hospital in New Orleans. The physical plant consists of 150 buildings with an inventory value of $1,471,045. The number of its inmates in 1927–1928 was 2511, and its appropriation from the state for the two years ending June 30, 1928 was $1,375,250. The affairs of the institution are managed by a medical superintendent and a business executive, both of whom are selected by a board of directors appointed by the governor.

Central Louisiana State Hospital. This state hospital for the care and treatment of the insane was opened in 1906 at Pineville. The plant consists of forty-two buildings and has an inventory value of $1,307,000. The state appropriation for the two years 1926–1928 was $823,500. The number of patients in 1929 was 1213. The 1916–1918 report of the National Society for Mental Hygiene gave the death rate of this institution as the lowest of all hospitals of its kind in the United States.

The State Colony and Training School, located on the old Camp Beauregard site near Alexandria, is an institution for the feeble-minded. Courses in academic and in-

dustrial work are offered under proper medical supervision. The physical plant has a money valuation of $450,000. In 1928 there were 429 enrolled in the institution; the annual revenue is $150,000.

The National Leprosarium (United States Marine Hospital No. 66), located in Carville on the Mississippi River, is the national hospital for the care of lepers. This institution was established in 1894 as the Louisiana Leper Home and maintained by Louisiana legislative appropriation until 1921, when it was purchased by the Federal government. In 1927 the number of its patients was 275. Its physical plant has a value of approximately $2,000,000; its annual congressional appropriation for operating expenses is about $350,000. Approximately one per cent of its patients are paroled annually as "arrested and no longer a menace to public health.'

Louisiana State Penitentiary. In 1900 the legislature, acting under a mandate of the Constitution of 1898, made provision for abandoning the system of leasing convicts to private corporations and for administering the penitentiary under direct supervision of the state. Today the penitentiary operates three farms (Angola plantation and sugar refinery in West Feliciana Parish, Oakley plantation in Iberville, and Monticello plantation, also in Iberville) with a total area of 20,000 acres. The chief crops are corn, cane, rice, and live stock; and the approximate value of the penitentiary property is $3,000,000.

The Receiving Station and Factory are located in Baton Rouge. On arrival convicts are given a physical examination, on the basis of which they are assigned to

work. The daily maintenance cost per convict is about sixty-eight cents.

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CHAPTER XVIII

CONCLUSION

In the preceding pages we have learned that Louisiana, who once occupied a place of preëminence in the Union but whose wealth was largely destroyed by the War Between the States, has in many activities risen again to prominent rank. The state's present material and spiritual status reflects the labor, self-denial, and sacrifice of the people of the past. Their stamina raised the state from the pit of poverty into which Louisiana was thrust by conditions incident to the war. In their lives we have a glorious heritage. They, like the men of the Old South who possessed a unique ability to manage large plantations and thousands of slaves, had a signal power to plan and to do. This inherited ability is a trait of character that passes down from generation to generation. It is alive and active today; it accounts in no small part for the state's recent extraordinary progress. What has been accomplished during the last quarter of a century, and particularly during the last decade, is but the beginning of a new era of prosperity that gives promise of bringing Louisiana back to her former rank among the states of the Union.

In directing attention to recent strides in development we gladly acknowledge also the talent and energy of those who have come into our boundaries from other states. Since the dreaded diseases of yellow fever and malaria

have been conquered, men and women have come into our midst without fear or hesitancy, for Louisiana now compares favorably with other states in all matters relating to health, having a death rate consistently lower than that of many of the leading states of the Union.

In the preceding pages we learned that, on account of the temperature and rainfall of Louisiana, living conditions which our state offers man and vegetation are practically ideal. An average temperature of 65° F. in northern Louisiana and 68° F. in southern Louisiana and an average rainfall of fifty-five to sixty inches generally well distributed through the seasons make every month a planting month. While Louisiana claims a greater variety of crops than does any other state, farming is confined chiefly to four staples: corn, cotton, sugar cane, and rice. Numerous less staple and fancy crops, however, are grown for market, as are others of minor importance. It is very evident, therefore, that progress is due mainly to our fertile soil. The alluvial valleys, made of deposits of nourishing particles of the plant food from the great Mississippi's drainage basin, are as rich as the famed delta of the Nile. The marshlands also are highly productive and the bluff regions hardly less fertile, while the pine hills are yielding millions annually in fruit, truck, and general crops.

Forest products are a third factor contributing to the state's remarkable development in recent years. Having from this source an annual income of many millions of dollars, Louisiana ranks among the leading lumber-producing states in the Union. Many pine and cypress mills can continue in operation for years to come, while others,

by proper methods of conservation, are being provided a perpetual forest supply.

Mineral deposits are also a great source of revenue. The sulphur mines near Lake Charles produced for a long time practically all the crude sulphur mined in our country. The salt mines on the shores of the Gulf supply pure salt which needs no cleaning or refining, merely crushing and grading. So numerous and so great are the domes that we have but the faintest idea of the true value of our salt deposits. But our greatest source of mineral wealth is found in our oil and gas fields. In the production of oil and gas Louisiana ranks among the leading states of the Union.

Different forms of wild life are a great asset. If the conservation policy of our government is supported, sportsmen will always be able to find the object of their quest; commerce will have furs, shrimp, and oysters as articles of trade.

Facilities of travel and transportation are important factors contributing to Louisiana's development. Great advance has been made in the construction of highways. Thousands of miles of improved state and local roads connect remote hamlets, towns, and cities. Crossing the hills of the northern section, winding along the streams of the south, and penetrating deepest swamps they bring advantages and opportunity to all. These highways, together with large trunk lines and several less-important railways, form a bond of union making our whole state one great community.

In water transportation, too, Louisiana has many trade arteries. The great Mississippi, numerous canals, and

approximately five thousand miles of navigable streams give us the best system of inland navigation in our country. Louisiana ranks high in maritime commerce. New Orleans, with its deep sheltered waters bordered with miles of steel docks and modern facilities for handling freight, is not only the greatest commercial center of the South but the second port of the United States. In its harbor ships from every land discharge and receive cargo. Baton Rouge, with its oil tankers, is fast assuming a prominent place among the ports of the nation, while Lake Charles, our newest port, has a rapidly growing foreign commerce. In addition, steamship lines and trunk railways, with their ever increasing investments, annually contribute to Louisiana's progress.

We have advanced rapidly in recent years in the development of our manufacturing interests. Throughout the southern section are many sugar and rice mills. One of the largest sugar refineries in the world is at New Orleans. In widely distributed points are hardwood, cypress, and pine mills. The mill at Bogalusa is one of the largest in the world. Stave and box factories, furniture, paper, oil, glass, cigar, clothing, and other factories, as well as foundries, dry docks, and shipbuilding plants are found in different sections of the state (Appendix, Table 37).

Louisiana's forward strides, however, are not confined to business and industry. In educational progressiveness Louisiana yields precedence to no other state. The public schools are the pride of our people. Since 1900 the average attendance increased 139 per cent, the value of school property advanced nearly 1900 per cent. The

total illiteracy in Louisiana decreased 23.9 per cent between 1890 and 1920 as compared with 7.3 per cent for the nation as a whole.

Our laws are unique. Based on a written code in operation in France for a century before being established in Louisiana and having been revised as required by progress, the Revised Code has seldom been departed from in seeking a solution to legal problems. The design chosen for the great State Seal, a pelican on the nest feeding her young and the accompanying legend, " Union, Justice, Confidence," is truly emblematic of our strong and able state government.

In addition to social advantages and varied resources, Louisiana offers her citizens a landscape of beauty. From spring's early burst of bloom through summer's succession of brilliant flowers, autumn's deep rich coloring, and winter's profusion of bright berries, Louisiana's landscape possesses a charm peculiarly its own. Rippling creek and winding bayou, stately pine and majestic live oak, stalwart cypress and giant tupelo make this a picturesque region. In the words of visitors in our midst, " Louisiana's breath-taking beauty is a veritable peep at fairyland."

The advantages and possibilities of Louisiana are many ; but here, as elsewhere, success in the business, professional, or industrial world will depend upon how well one works. Success will depend, too, upon how thoroughly the environment is understood and upon the degree to which one coöperates with his fellowman. The world has learned to appreciate the strength and the value of cooperation. The future development of our state depends

upon the extent to which man ceases to try to act alone and individually and directs his attention to coöperation. In the new era before us, success will be a matter of helpfulness; but it is difficult for anyone to render genuine assistance without being fully conversant with all the facts. We should, therefore, know our state in its every aspect; should know our resources in their relation to each other, to the state, and to the nation as a whole. No matter what our field of endeavor may be, no matter what our lot in life, let us cheerfully accept our responsibilities of citizenship and courageously strive ever to promote the development of a greater Louisiana.

APPENDIX

APPENDIX

TABLE I. PER CAPITA WEALTH OF THE SOUTHERN STATES[1]

	Taxable Property Only		Taxable and Exempt Property	
	1860	1870	1900	1922
Louisiana	$850	$356	$590	$1,855
South Carolina	779	236	362	1,385
Mississippi	767	202	359	1,216
Georgia	611	181	422	1,306
Texas	605	155	762	2,010
Kentucky	576	366	636	1,459
Maryland	549	660	1,109	2,665
District of Columbia	547	771	3,332	3,879
Florida	521	188	673	2,358
Alabama	514	162	424	1,244
Arkansas	504	258	461	1,439
Virginia	497	267	594	2,050
Tennessee	445	317	473	1,773
Missouri	424	597	1,044	2,903
North Carolina	361	195	360	1,703
West Virginia	...	345	688	3,040
Oklahoma	...	...	1,027	1,864
Average for South	$556	$322	$653	$1,935
Average for United States	$514	$624	$1,165	$2,918

[1] Compiled by the *Manufacturers Record* from United States Government estimates.

TABLE 2. NATIVITY OF POPULATION[1]

CLASS OF POPULATION	NUMBER		
	1920	1910	1900
THE STATE			
Total population	**1,798,509**	**1,656,388**	**1,381,625**
White	1,096,611	941,086	729,612
Negro	700,257	713,874	650,804
Indian	1,066	780	593
Chinese	387	507	599
Japanese	57	31	17
All other	131	110	. . .
Native white, total	1,051,740	889,304	677,759
Native parentage	941,724	776,587	569,962
Foreign parentage	67,016	68,389	63,317
Mixed parentage	43,000	44,328	44,480
Foreign-born white	44,871	51,782	51,853
URBAN POPULATION			
Total	**628,163**	**496,516**	**366,288**
White	437,221	335,175	248,830
Negro	190,413	160,845	116,954
Indian, Chinese, Japanese, and all other	529	496	504
Native white, total	404,612	301,918	215,834
Native parentage	320,229	217,517	132,814
Foreign parentage	50,703	51,807	83,020
Mixed parentage	33,680	32,594	
Foreign-born white	32,609	33,257	32,996
RURAL POPULATION			
Total	**1,170,346**	**1,159,872**	**1,015,337**
White	659,390	605,911	480,782
Negro	509,844	553,029	533,850
Indian, Chinese, Japanese, and all other	1,112	932	705
Native white, total	647,128	587,386	461,925
Native parentage	621,495	559,070	437,148
Foreign parentage	16,313	16,582	24,777
Mixed parentage	9,320	11,734	
Foreign-born white	12,262	18,525	18,857

[1] From United States Bureau of the Census.

TABLE 3. ELEVATION OF SELECTED CITIES [1]

	Ft.		Ft.
Abbeville	15	Morgan City	14
Alexandria	76	Monroe	89
Baton Rouge	35	Natchitoches	118
Columbia	134	New Orleans	11
De Ridder	201	Opelousas	67
Lafayette	39	Ruston	311
Lake Charles	16	Shreveport	237
Lake Providence	69	Tallulah	90

[1] Data from railroad levels.

TABLE 4. POPULATION OF LOUISIANA: 1810 TO 1920 [1]

Census Year	Population	Increase over Preceding Census		Per cent of Increase for the United States
		Number	Per cent	
1920	1,798,509	142,121	8.6	14.9
1910	1,656,388	274,763	19.9	21.0
1900	1,381,625	263,037	23.5	20.7
1890	1,118,588	178,642	19.0	25.5
1880	939,946	213,031	29.3	30.1
1870	726,915	18,913	2.7	22.6
1860	708,002	190,240	36.7	35.6
1850	517,762	165,351	46.9	35.9
1840	352,411	136,672	63.4	32.7
1830	215,739	62,332	40.6	33.5
1820	153,407	76,851	100.4	33.1
1810	76,556	. . .	. . .	. . .

[1] From United States Bureau of the Census.

Table 5. Population of Principal Cities from Earliest Census to 1920[1]

[A minus sign (−) denotes decrease.]

City and Census Year	Population	Increase over Preceding Census	
		Number	Per cent
Alexandria:			
1920	17,510	6,297	56.2
1910	11,213	5,565	98.5
1900	5,648	2,787	97.4
1890	2,861	1,061	58.9
1880	1,800	582	47.8
1870	1,218	− 243	− 16.6
1860	1,461	789	117.4
1850	672	. . .	. . .
Baton Rouge:			
1920	21,782	6,885	46.2
1910	14,897	3,628	32.2
1900	11,269	791	7.5
1890	10,478	3,281	45.6
1880	7,197	699	10.8
1870	6,498	1,070	19.7
1860	5,428	1,523	39.0
1850	3,905	1,636	72.1
1840	2,269	. . .	. . .
Lake Charles:			
1920	13,088	1,639	14.3
1910	11,449	4,769	71.4
1900	6,680	3,238	94.1
1890	3,442	2,604	310.7
1880	838	. . .	. . .
Monroe:			
1920	12,675	2,466	24.2
1910	10,209	4,781	88.1
1900	5,428	2,172	66.7
1890	3,256	1,186	57.3
1880	2,070	121	6.2
1870	1,949	. . .	. . .
1860	(1)	. . .	. . .
1850	435	. . .	. . .
New Orleans:			
1920	387,219	48,144	14.2
1910	339,075	51,971	18.1
1900	287,104	45,065	18.6
New Orleans—Contd.			
1890	242,039	25,949	12.0
1880	216,090	24,672	12.9
1870	191,418	22,743	13.5
1860	168,675	52,300	44.9
1850	116,375	14,182	13.9
1840	102,193	56,111	121.8
1830	46,082	18,906	69.6
1820	27,176	9,934	57.6
1810	17,242	. . .	. . .
Shreveport:			
1920	43,874	15,859	56.6
1910	28,015	12,002	75.0
1900	16,013	4,034	33.7
1890	11,979	3,970	49.6
1880	8,009	3,402	73.8
1870	4,607	2,417	110.4
1860	2,190	462	26.7
1850	1,728	. . .	. . .

(1) Not returned separately.

[1] From United States Bureau of the Census.

TABLE 6. POPULATION OF CITIES AND TOWNS OF 1,000 AND OVER

	CENSUS 1920	ESTIMATE JAN. 1925		CENSUS 1920	ESTIMATE JAN. 1925
Abbeville	3,461	3,738	Lecompte	1,034	1,034
Alexandria	17,510	20,365	Leesville	2,518	2,807
Amite	1,854	1,943	Longville	. . .	2,000
Arcadia	1,240	1,321	Lutcher	1,700	1,700
Baldwin	964	1,064	McDonoghville	. . .	1,600
Bastrop	1,216	1,397	McNary	1,318	1,318
Baton Rouge	21,782	27,327	Madisonville	1,103	1,141
Berwick	1,691	1,691	Mandeville	1,130	1,130
Bogalusa	8,245	8,245	Mansfield	2,564	2,932
Bossier	1,094	1,254	Marksville	1,185	1,076
Boyce	1,060	1,163	Melville	958	1,058
Breaux Bridge	1,171	1,339	Merryville	2,963	2,963
Bunkie	1,743	1,743	Minden	6,105	7,657
Cedar Grove	1,980	1,980	Monroe	12,675	14,220
Colfax	1,449	1,649	Mooringsport	992	1,092
Covington	2,942	3,113	Morgan City	5,429	5,429
Crowley	6,108	6,613	Napoleonville	1,171	1,216
De Quincy	1,823	2,377	Natchitoches	3,388	3,816
De Ridder	3,535	4,238	New Iberia	6,278	8,110
Donaldsonville	3,745	3,745	New Orleans	387,219	412,014
Elizabeth	. . .	3,000	New Roads	1,294	1,294
Elton	995	1,005	Oakdale	4,016	4,016
Eros	1,184	1,327	Opelousas	4,437	4,437
Eunice	3,272	4,066	Patterson	2,538	2,538
Franklin	3,504	3,504	Pineville	2,188	2,676
Franklinton	964	1,093	Plaquemine	4,632	3,977
Fullerton	2,412	2,999	Ponchatoula	955	1,055
Glenmora	2,298	2,298	Rayne	2,720	3,007
Gretna	7,197	7,197	Rayville	1,499	1,709
Gueydan	1,233	1,309	Ruston	3,389	3,395
Hammond	3,855	3,855	St. Martinville	2,465	2,539
Haynesville	903	1,173	Shreveport	43,874	57,040
Homer	3,305	4,030	Slidell	2,958	3,343
Houma	5,160	5,228	Sulphur	1,714	1,714
Independence	1,032	1,046	Tallulah	1,316	1,551
Jackson	2,320	2,407	Thibodaux	3,526	3,526
Jeanerette	2,512	2,665	Vidalia	1,246	1,246
Jennings	3,824	2,824	Ville Platte	1,364	1,745
Jonesville	1,029	1,400	Vinton	1,441	1,441
Kaplan	876	1,344	Vivian	1,864	2,383
Kenner	1,882	1,882	Washington	1,041	1,776
Kentwood	3,059	2,059	Welsh	1,456	1,559
Kinder	1,148	1,415	Westlake	. . .	1,250
Lafayette	7,855	8,587	West Monroe	2,240	2,297
Lake Arthur	1,882	2,277	White Castle	1,566	1,566
Lake Charles	13,088	13,930	Winnfield	2,975	3,025
Lake Providence	1,917	2,092	Winnsboro	1,176	1,354

TABLE 7. AREA AND POPULATION OF PARISHES

PARISH	LAND AREA IN SQUARE MILES: 1920	1920	
		Total	Per Square Mile
Louisiana	**45,409**	**1,798,509**	**39.6**
Acadia	647	34,820	53.8
Allen	663	18,382	27.7
Ascension	291	22,155	76.1
Assumption	484	17,912	37.0
Avoyelles	847	35,300	41.7
Beauregard	1,172	20,767	17.7
Bienville	848	20,977	24.7
Bossier	863	22,266	25.8
Caddo	880	83,265	94.6
Calcasieu	1,086	32,807	30.2
Caldwell	531	9,514	17.9
Cameron	1,501	3,952	2.6
Catahoula	718	11,074	15.4
Claiborne	778	27,885	35.8
Concordia	714	12,466	17.5
De Soto	872	29,376	33.7
East Baton Rouge	455	44,513	97.8
East Carroll	420	11,231	26.7
East Feliciana	464	17,487	37.7
Evangeline	964	23,485	24.4
Franklin	630	24,100	38.3
Grant	683	14,403	21.1
Iberia	589	26,855	45.6
Iberville	584	26,806	45.9
Jackson	578	14,486	25.1
Jefferson	429	21,563	50.3
Jefferson Davis	729	18,999	26.1
La Salle	640	9,856	15.4
Lafayette	279	30,841	110.5
Lafourche	994	30,344	30.5
Lincoln	472	16,962	35.9
Livingston	662	11,643	17.6
Madison	650	10,829	16.7
Morehouse	831	19,311	23.2
Natchitoches	1,289	38,602	29.9

TABLE 7 — *Continued*

PARISH	LAND AREA IN SQUARE MILES: 1920	1920	
		Total	Per Square Mile
Orleans	178	387,219	2,175.4
Ouachita	642	30,319	47.2
Plaquemines	1,011	10,194	10.1
Pointe Coupee	576	24,697	42.9
Rapides	1,370	59,444	43.4
Red River	400	15,301	38.3
Richland	565	20,860	36.9
Sabine	1,020	20,713	20.3
St. Bernard	621	4,968	8.0
St. Charles	295	8,586	29.1
St. Helena	420	8,427	20.1
St. James	254	21,228	83.6
St. John the Baptist	231	11,896	51.5
St. Landry	681	51,697	75.9
St. Martin	525	21,990	41.9
St. Mary	632	30,754	48.7
St. Tammany	906	20,645	22.8
Tangipahoa	790	31,440	39.8
Tensas	632	12,085	19.1
Terrebonne	1,760	26,974	15.3
Union	918	19,621	21.4
Vermilion	1,213	26,482	21.8
Vernon	1,367	20,493	15.0
Washington	655	24,164	36.9
Webster	609	24,707	40.6
West Baton Rouge	214	11,092	51.8
West Carroll	366	8,857	24.2
West Feliciana	352	12,303	35.0
Winn	969	16,119	16.6

Table 8. The Areas of Louisiana and Other States

States	Sq. Mi.	States	Sq. Mi.
Alabama	51,998	Montana	146,997
Alaska	590,884	Nebraska	77,520
Arizona	113,956	Nevada	110,690
Arkansas	53,335	New Hampshire	9,341
California	158,297	New Jersey	8,224
Colorado	103,948	New Mexico	122,634
Connecticut	4,965	New York	49,204
Delaware	2,370	North Carolina	52,426
District of Columbia	70	North Dakota	70,837
Florida	58,666	Ohio	41,040
Georgia	59,265	Oklahoma	70,057
Idaho	83,888	Oregon	96,699
Illinois	56,665	Pennsylvania	45,126
Indiana	36,354	Rhode Island	1,248
Iowa	56,147	South Carolina	30,989
Kansas	82,158	South Dakota	77,615
Kentucky	40,598	Tennessee	42,022
Louisiana	48,506	Texas	265,896
Maine	33,040	Utah	84,990
Maryland	12,327	Vermont	9,564
Massachusetts	8,266	Virginia	42,627
Michigan	57,980	Washington	69,127
Minnesota	84,682	West Virginia	24,170
Mississippi	46,865	Wisconsin	56,066
Missouri	69,420	Wyoming	97,914

TABLE 9. LENGTHS OF LEVEE LINES IN LOUISIANA AND ARKANSAS PROTECTING ALLUVIAL LANDS OF LOUISIANA, APRIL 1, 1926[1]

NAME OF STATE DISTRICTS	MILES ON MISSISSIPPI RIVER		MILES ON RED RIVER		MILES ON ATCHAFALAYA RIVER	MILES ON ARKANSAS RIVER	MILES ON OTHER STREAMS	TOTAL MILES BY DISTRICTS
Southeast Arkansas		70.6				82.1	13.0	165.7
Tensas Basin							10.0	10.0
Fifth Louisiana — Above Bedford	91.3	245.8					12.7	258.5
Fifth Louisiana — Below Bedford	154.5							
Atchafalaya Basin		122.4			56.4		81.7	260.5
Pontchartrain		125.4					0.3	125.7
Lafourche — Above New Orleans	82.3	120.6						120.6
Lafourche — Below New Orleans	38.3							
Orleans — Left bank Mississippi River	12.1	25.9					79.9	105.8
Orleans — Right bank Mississippi River	13.8							
Lake Borgne		49.5						49.5
Grand Prairie		21.5						21.5
Plaquemines Parish East Bank							27.5	27.5
Buras		33.8					8.5	42.3
Caddo — Above Shreveport			56.6	90.1				90.1
Caddo — Below Shreveport			33.5					
Bossier			57.3					57.3
Red River Atchafalaya and Bayou Boeuf			52.5		44.6		57.0	154.1
Red River and Bayou des Glaises			28.1					28.1
Saline			10.3					10.3
Outside of Levee Districts		12.0	6.9					18.9
TOTALS		827.5		245.2	101.0	82.1	290.6	1,546.4

[1] From Board of State Engineers.

Table 10. Mean Temperatures on Record[1]

NORTH LOUISIANA

Stations	Length of Record (Years)	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Alexandria	31	49.2	51.1	59.9	66.8	73.6	80.1	82.1	81.9	77.1	66.3	57.3	49.6	66.2
Antioch	6	48.5	48.2	54.4	64.4	71.1	79.5	82.7	80.9	75.9	66.1	57.0	45.8	64.5
Calhoun	31	47.0	48.4	56.8	64.1	71.7	79.0	81.3	80.8	75.3	64.7	54.9	47.2	64.3
Collinston	17	48.3	48.9	58.7	64.9	73.0	79.9	82.0	81.9	76.7	65.0	55.7	47.2	65.2
Dodson	10	50.7	52.0	58.8	65.4	72.3	80.7	82.8	82.2	77.6	67.5	58.1	48.2	66.4
Farmerville	28	46.5	47.7	56.1	64.7	71.8	79.0	81.1	80.6	75.5	64.1	54.8	47.1	64.1
Grand Cane*	28	46.8	48.8	57.1	64.7	74.3	78.8	81.2	81.0	75.7	64.7	55.3	48.0	64.7
Liberty Hill	30	48.9	50.5	58.6	63.9	72.8	80.2	82.7	82.4	77.2	66.4	56.8	49.1	65.8
Minden	31	47.0	48.3	56.7	64.7	72.1	79.5	82.1	81.5	76.5	65.3	55.5	47.2	64.7
Monroe	31	47.9	49.5	58.3	66.1	73.3	80.0	82.3	81.9	77.0	66.0	56.3	49.0	65.6
Newellton	12	50.8	51.5	60.3	65.7	71.9	79.6	81.6	81.2	76.0	65.5	56.0	49.4	65.8
Plain Dealing	27	46.5	47.9	57.4	64.1	71.8	79.0	81.9	81.6	76.6	65.9	55.4	46.7	64.6
Richland Plantation	7	51.1	53.0	58.3	65.8	73.6	80.6	82.9	81.9	76.5	67.1	57.2	50.0	66.5
Robeline	22	48.0	49.6	58.7	64.7	72.0	79.2	81.5	81.4	75.8	64.5	56.3	47.0	64.9
Ruston	24	47.7	48.7	58.6	63.7	72.4	80.8	82.0	81.6	77.3	66.1	56.9	47.7	65.3
Shreveport	47	47.1	50.3	58.5	66.0	73.3	80.4	82.9	82.2	76.6	66.3	56.0	48.9	65.7
Tallulah	11	49.5	49.3	57.7	64.6	72.3	79.2	81.8	81.5	76.9	63.8	54.8	47.1	64.9

* The records from 1893 to 1898, inclusive, and for 1906 from Oxford, about 14 miles southeast of Grand Cane; and from 1899 to 1905, inclusive, from Mansfield, about 6 miles east of Grand Cane.

[1] Data from United States Weather Bureau.

SOUTH LOUISIANA

Stations	Number of Years Record	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Abbeville	31	53.7	55.0	62.7	68.7	74.5	80.1	81.4	81.3	78.0	69.0	60.4	53.7	68.2
Amite	31	51.4	53.2	61.2	66.9	73.5	79.8	81.2	81.2	77.1	66.6	58.1	51.6	66.8
Angola	5	54.0	56.2	61.4	68.6	76.3	84.5	85.2	84.8	77.8	69.8	63.0	51.5	69.4
Baton Rouge	31	52.4	53.7	61.6	67.6	74.3	79.9	81.4	81.4	77.8	68.3	59.7	52.8	67.6
Burrwood	31	56.0	56.8	62.4	68.1	74.7	80.5	82.4	82.4	80.5	73.6	65.9	58.8	70.2
Cades	8	54.4	55.3	61.6	68.2	74.8	80.6	81.7	81.8	78.2	69.2	61.3	54.2	68.4
Cameron	20	51.8	54.0	61.3	68.3	74.1	79.7	81.1	81.3	78.5	69.3	61.4	54.0	67.9
Cheneyville	31	50.2	52.0	60.7	67.0	73.6	79.9	81.7	81.4	76.8	66.4	58.3	50.5	66.5
Cinclare	8	52.2	54.6	60.2	68.5	74.2	80.8	81.8	81.3	77.6	68.3	57.8	51.8	67.4
Clinton	31	51.1	53.0	61.0	66.7	73.2	79.1	80.6	80.0	76.1	66.9	58.5	51.5	66.5
Covington	27	50.8	51.7	61.5	67.6	74.2	80.1	81.2	81.5	77.7	67.3	58.5	51.2	66.9
Donaldsonville	31	53.6	55.6	62.5	68.2	74.8	80.4	81.6	81.7	78.9	69.6	61.3	54.4	68.6
Franklin	27	53.0	54.4	63.3	68.9	75.7	81.3	82.3	82.3	79.1	69.2	60.7	53.8	68.7
Franklinton	8	51.7	54.2	60.1	66.6	73.9	80.4	81.6	81.0	78.2	69.4	57.1	52.7	67.2
Grand Coteau	34	53.2	54.9	62.3	68.4	74.2	79.9	81.7	81.3	77.6	67.6	59.5	53.9	67.9
Hammond	27	52.2	53.7	61.7	67.3	74.1	80.1	81.4	81.4	77.5	67.4	58.9	52.3	67.3
Houma	31	54.2	55.7	63.1	69.0	75.2	80.3	81.3	81.6	78.3	68.9	61.2	55.0	68.6
Jeanerette	20	53.9	55.7	62.5	68.5	74.6	80.6	81.7	81.4	77.8	68.6	61.6	54.7	68.5
Jennings	22	52.2	52.7	62.2	67.2	74.1	80.4	81.3	82.2	78.2	68.9	59.9	52.3	67.6
Lafayette	31	52.6	54.1	61.8	67.9	74.2	80.0	81.2	81.4	77.6	68.0	60.0	52.9	67.6
Lake Charles	31	51.8	53.7	60.9	67.2	73.6	80.0	81.5	81.5	77.7	68.3	59.6	52.8	67.4
Lakeside	18	53.6	54.6	62.7	67.6	74.7	80.8	82.1	82.4	78.2	68.6	60.5	53.6	68.3
Melville	31	51.6	53.4	61.0	67.5	74.3	79.7	81.6	81.2	77.3	67.1	58.6	51.6	67.6
Napoleonville	9	53.8	55.2	60.9	67.6	75.0	80.9	81.6	81.4	76.1	66.6	59.3	52.8	67.1
New Iberia	31	54.1	55.2	63.2	68.4	74.5	80.3	81.6	81.3	77.9	68.8	61.0	54.6	68.4
New Orleans	48	54.3	56.8	63.1	68.7	75.2	80.8	82.3	82.2	79.0	70.5	61.6	55.3	69.2
Opelousas	27	51.3	52.4	61.6	67.5	74.1	80.0	81.5	81.4	77.6	67.4	58.9	51.2	67.1
Rayne	27	53.2	53.8	62.3	68.4	74.9	80.7	82.2	82.2	78.2	69.0	60.4	53.2	68.2
Reserve	18	53.6	53.8	62.1	67.7	75.4	82.0	82.7	82.5	78.5	69.1	59.6	53.1	68.3
St. Francisville	16	51.4	52.7	61.7	66.9	74.0	80.6	81.7	81.8	78.7	68.1	59.0	51.0	67.3
Schriever	27	53.7	54.7	63.4	69.0	75.1	80.6	82.0	82.0	78.5	77.1	60.8	54.6	69.3
Tenmile	26	52.0	52.6	61.5	67.1	74.1	80.2	82.0	81.5	77.6	67.4	58.5	52.1	67.2

Table 11. Lowest Temperatures on Record[1]

NORTH LOUISIANA

	No. Years	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Alexandria	33	9	3	20	29	39	45	59	48	40	27	19	10	3
Antioch	6	10	12	21	31	40	50	56	54	38	25	17	13	10
Calhoun	33	0	− 13	19	25	37	45	54	40	38	24	17	10	− 13
Collinston	17	10	9	23	30	38	52	55	55	39	26	10	12	9
Dodson	12	3	14	23	28	38	51	57	54	42	26	17	12	3
Farmerville	28	0	− 15	20	32	37	47	56	51	38	25	11	10	− 15
Grand Cane	30	− 1	− 6	20	29	36	47	54	50	37	23	19	13	− 6
Liberty Hill	30	− 2	− 6	19	28	36	47	56	48	40	22	14	7	− 6
Minden	33	0	− 16	19	27	36	48	55	51	37	22	12	10	− 16
Monroe	33	4	− 3	20	31	39	52	59	54	43	29	20	11	− 3
Newellton	14	6	17	23	30	37	47	55	55	37	23	16	11	6
Plain Dealing	29	− 3	− 14	19	27	35	45	55	52	38	22	11	6	− 14
Richland Plantation	9	9	20	20	33	41	48	59	60	42	24	21	14	9
Robeline	24	2	− 6	21	26	34	44	53	49	32	24	15	12	− 6
Ruston	26	0	− 15	22	30	40	49	56	51	37	25	20	10	− 15
Shreveport	46	1	− 5	22	31	42	53	62	54	44	29	18	10	− 5
Tallulah	11	8	16	24	30	40	47	55	57	38	21	17	12	8

See note under mean temperature.

SOUTH LOUISIANA

Abbeville	31	12	5	26	33	39	53	62	57	43	30	22	16	5
Amite	32	11	1	20	28	38	50	53	50	42	27	20	10	1
Angola	6	8	20	24	32	45	55	61	61	42	31	26	14	8
Baton Rouge	32	11	2	25	32	40	54	61	53	43	31	23	14	2
Burrwood	25	24	10	35	46	55	61	65	68	60	46	36	28	10
Cades	9	7	19	24	31	53	56	61	64	46	27	21	11	7
Cameron	20	17	13	14	35	39	44	60	45	42	30	20	16	13
Cheneyville	30	9	14	22	32	39	42	58	50	40	24	18	12	9
Cinclare	10	11	20	25	30	45	54	60	56	45	28	22	15	11
Clinton	31	10	0	24	31	40	50	55	52	41	28	22	12	0
Covington	26	14	10	26	31	42	53	60	59	39	29	21	9	9
Donaldsonville	31	13	3	26	33	42	52	60	62	48	33	25	15	3
Franklin	29	13	8	27	33	43	55	62	63	47	31	23	16	8
Franklinton	9	10	20	21	30	43	48	60	59	41	21	21	18	10
Grand Coteau	36	10	2	24	33	42	50	61	58	44	30	22	17	2
Hammond	26	14	1	22	32	42	52	59	59	43	27	19	10	1
Houma	30	14	5	25	28	42	51	58	56	44	30	21	10	5
Jeanerette	20	11	3	23	31	42	54	60	52	42	29	23	16	3
Jennings	23	10	3	25	32	40	53	59	60	43	27	23	17	3
Lafayette	32	10	6	24	32	43	53	60	53	41	27	21	14	6
Lake Charles	31	10	3	20	30	40	52	54	50	42	32	20	19	3
Lakeside	19	13	19	32	35	42	53	65	64	43	34	25	19	13
Melville	32	8	5	24	31	40	48	56	54	42	25	16	10	5
Napoleonville	9	12	5	30	33	47	58	60	60	41	29	26	14	5
New Iberia	31	12	6	25	31	47	55	64	55	46	31	23	16	6
New Orleans	50	15	7	30	38	52	58	66	63	54	40	29	19	7
Opelousas	26	8	2	24	32	40	52	58	56	41	26	18	11	2
Rayne	28	11	3	23	34	41	51	63	61	41	30	18	13	3
Reserve	11	16	24	28	31	50	53	58	62	50	33	28	18	16
St. Francisville	11	11	21	25	33	44	55	56	60	47	29	22	14	11
Schriever	27	15	6	27	30	40	52	60	58	37	27	24	13	6
Tenmile	26	10	5	22	32	38	44	56	55	46	21	23	5	5

[1] From United States Weather Bureau.

TABLE 12. HIGHEST TEMPERATURES ON RECORD[1]

NORTH LOUISIANA

	No. Years	January	February	March	April	May	June	July	August	September	October	November	December	Annual
Alexandria	33	87	85	93	93	99	106	109	107	102	98	88	85	109
Antioch	0	80	90	89	92	98	106	105	105	101	96	93	77	106
Calhoun	29	84	90	91	91	100	103	107	110	104	96	88	81	110
Collinston	17	86	85	92	93	99	105	103	107	102	99	89	85	107
Dodson	12	82	88	91	93	100	107	106	104	100	98	89	82	107
Farmerville	28	85	88	89	90	94	104	105	108	100	96	87	84	108
Grand Cane	30	84	85	91	91	99	104	106	110	104	98	88	82	110
Liberty Hill	30	86	88	99	96	102	108	111	112	106	103	91	85	112
Minden	33	85	92	91	92	99	106	111	112	105	99	94	83	112
Monroe	33	86	89	95	94	98	103	109	108	103	101	95	89	109
Newellton	14	84	87	88	94	101	103	103	104	100	96	90	88	104
Plain Dealing	29	85	88	91	95	98	107	108	110	104	99	94	82	110
Richland Plantation	9	83	85	89	93	98	102	103	101	100	95	87	83	103
Robeline	24	88	89	91	92	99	104	107	110	103	96	95	85	110
Ruston	26	85	88	91	96	100	107	108	107	104	100	95	88	108
Shreveport	46	83	89	90	96	101	104	107	110	101	95	86	80	110
Tallulah	11	83	85	93	95	99	103	101	105	102	95	86	87	105

See note under mean temperature.

SOUTH LOUISIANA

Abbeville	30	84	85	93	92	105	104	101	102	101	99	90	88	105
Amite	32	83	85	90	93	98	105	104	104	99	98	89	85	105
Angola	5	89	91	92	101	107	109	107	109	105	100	92	84	109
Baton Rouge	32	85	87	90	96	97	103	103	110	100	98	89	85	110
Burrwood	25	80	82	84	86	93	99	97	97	99	94	86	82	99
Cades	9	80	82	86	90	98	101	98	98	98	97	87	83	101
Cameron	20	85	84	89	94	101	101	103	102	104	100	89	87	104
Cheneyville	30	85	89	92	94	98	105	108	105	99	96	89	86	108
Cinclare	10	82	83	88	93	98	103	100	100	99	96	88	82	103
Clinton	31	81	85	89	91	100	101	102	100	100	96	89	87	102
Covington	26	83	84	90	95	99	102	101	105	99	97	92	84	105
Donaldsonville	31	92	88	94	95	100	102	102	103	102	100	94	90	103
Franklin	29	83	89	92	95	99	104	100	102	100	98	96	84	104
Franklinton	10	82	85	91	95	100	103	99	99	101	97	89	83	103
Grand Coteau	36	82	85	91	94	100	104	104	102	100	97	90	85	104
Hammond	26	82	85	93	92	99	103	106	103	101	99	89	84	106
Houma	30	88	85	88	92	99	104	102	100	98	96	90	87	104
Jeanerette	20	85	84	88	93	98	104	104	101	101	98	91	87	104
Jennings	23	83	86	89	97	100	104	105	102	100	98	93	89	105
Lafayette	32	89	87	93	93	98	103	107	102	100	96	90	89	107
Lake Charles	31	88	89	90	94	100	104	103	102	101	103	92	89	104
Lakeside	19	82	86	87	90	98	102	100	98	98	95	85	81	102
Melville	32	92	88	90	95	99	102	102	101	102	97	90	88	102
Napoleonville	9	81	84	88	96	96	102	100	103	97	92	84	84	103
New Iberia	31	84	85	87	90	95	100	101	98	95	95	92	90	101
New Orleans	50	82	83	86	90	96	102	102	100	98	94	89	83	102
Opelousas	26	84	87	95	97	102	104	104	104	101	99	97	85	104
Rayne	28	89	85	90	93	99	104	107	104	101	99	90	85	107
Reserve	11	83	87	94	100	103	107	107	106	103	101	95	90	107
St. Francisville	11	81	90	90	95	97	105	101	102	101	98	89	84	105
Schriever	27	87	86	92	94	98	102	104	105	100	99	91	87	105
Tenmile	26	80	88	86	89	93	102	102	102	99	98	86	81	102

[1] From United States Weather Bureau.

TABLE 13. MAXIMUM WIND VELOCITY[1]

STATIONS	NUMBER OF YEARS RECORD	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	ANNUAL
New Orleans:														
Velocity	46	51	52	45	48	48	50	42	60	86	54	42	48	86
Direction	...	se.	se.	sw.	n.	nw.	n.	s.	e.	se.	n.	n.	n.	se.
Year	...	1915	1881	1912	1893	1888	1906	1913	1888	1915	1896	1911	1893	1915
Day	...	31	6	28	14	24	1	23	19	29	27	12	16	...
Shreveport:														
Velocity	47	40	39	54	44	52	46	56	43	38	60	54	52	60
Direction		nw.	se.	nw.	w.	se.	n.	s.	ne.	w.	nw.	nw.	w.	nw.
Year		1909	1899	1894	1894	1908	1907	1897	1907	1909	1893	1873	1893	1893
Day		29	25	18	24	11	26	17	31	22	5	18	15	Oct. 5

[1] Data from United States Weather Bureau.

Table 14. Frost Data[1]

NORTH LOUISIANA

Station	Length of Record (Years)	Average Date of Last Killing Frost in Spring	Average Date of First Killing Frost in Autumn	Latest Date of Killing Frost in Spring	Earliest Date of Killing Frost in Autumn
Alexandria	28	Mar. 25	Nov. 16	Apr. 9	Oct. 14
Antioch	6	Apr. 3	Nov. 5	Apr. 10	Oct. 20
Calhoun	24	Mar. 30	Oct. 31	Apr. 25	Oct. 29
Collinston	17	Mar. 26	Nov. 6	Apr. 25	Oct. 19
Dodson	10	Mar. 24	Nov. 10	Apr. 25	Oct. 20
Farmerville	22	Mar. 28	Nov. 1	Apr. 25	Oct. 14
Grand Cane	12	Mar. 18	Nov. 5	Apr. 25	Oct. 9
Liberty Hill	26	Apr. 5	Oct. 31	Apr. 25	Oct. 9
Minden	29	Mar. 30	Oct. 29	Apr. 26	Oct. 9
Monroe	25	Mar. 11	Nov. 10	Apr. 9	Oct. 10
Newellton	12	Mar. 27	Oct. 23	Apr. 25	Oct. 10
Plain Dealing	25	Mar. 29	Nov. 1	Apr. 25	Oct. 20
Richland Plantation	7	Mar. 10	Nov. 8	Mar. 24	Oct. 20
Robeline	22	Mar. 25	Oct. 31	Apr. 30	Oct. 10
Ruston	23	Mar. 17	Nov. 6	Apr. 14	Oct. 19
Shreveport	48	Mar. 6	Nov. 10	Apr. 9	Oct. 20
Tallulah	10	Mar. 19	Oct. 28	Apr. 10	Oct. 13

SOUTH LOUISIANA

Abbeville	26	Mar. 8	Nov. 13	Apr. 25	Oct. 20
Amite	26	Mar. 15	Nov. 4	Apr. 11	Oct. 11
Angola	5	Mar. 12	Nov. 9	Apr. 10	Oct. 28
Baton Rouge	32	Feb. 20	Nov. 18	Apr. 5	Oct. 14
Burrwood	22	Jan. 25	Dec. 29	Mar. 17	Dec. 5
Cades	8	Mar. 8	Nov. 20	Apr. 3	Oct. 24
Cameron	20	Feb. 28	Nov. 24	Mar. 28	Oct. 18
Carrollton	6	Feb. 15	Dec. 6	Mar. 23	Nov. 16
Cheneyville	24	Mar. 3	Nov. 8	Apr. 20	Oct. 13
Cinclare	8	Mar. 6	Nov. 11	Apr. 3	Oct. 23
Clinton	24	Mar. 13	Nov. 7	Apr. 25	Oct. 20
Covington	20	Mar. 9	Nov. 14	Apr. 21	Oct. 21
Donaldsonville	26	Feb. 27	Nov. 23	Mar. 27	Oct. 27
Franklin	26	Feb. 21	Nov. 27	Apr. 3	Oct. 31
Franklinton	6	Mar. 6	Nov. 8	Mar. 24	Oct. 24
Grand Coteau	31	Feb. 18	Nov. 22	Mar. 24	Oct. 28
Hammond	23	Mar. 7	Nov. 11	Apr. 4	Oct. 24
Houma	30	Mar. 3	Nov. 17	Apr. 5	Oct. 25
Jeanerette	15	Mar. 6	Nov. 17	Apr. 4	Oct. 27
Jennings	20	Feb. 23	Nov. 15	Apr. 3	Oct. 20
Lafayette	26	Mar. 4	Nov. 11	Apr. 4	Oct. 12
Lake Charles	25	Mar. 4	Nov. 17	Apr. 13	Oct. 20
Lakeside	16	Feb. 10	Dec. 3	Mar. 5	Nov. 12
Melville	25	Mar. 12	Nov. 5	Apr. 3	Oct. 14
Napoleonville	6	Mar. 7	Nov. 22	Mar. 23	Oct. 29
New Iberia	24	Feb. 22	Nov. 24	Mar. 24	Oct. 29
New Orleans	46	Jan. 25	Dec. 16	Mar. 27	Nov. 11
Opelousas	26	Mar. 9	Nov. 12	Apr. 4	Oct. 20
Rayne	24	Mar. 1	Nov. 18	Mar. 29	Oct. 28
Reserve	15	Feb. 28	Nov. 23	Apr. 5	Oct. 25
St. Francisville	16	Feb. 28	Nov. 11	Apr. 10	Oct. 21
Schriever	25	Mar. 5	Nov. 13	Apr. 4	Oct. 24
Tenmile	25	Mar. 5	Nov. 18	Mar. 30	Oct. 29

[1] From United States Weather Bureau.

TABLE 15. MEAN PRECIPITATION BY MONTHS FOR SELECTED CITIES[1]

	No. Yrs.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	An'l
Alexandria .	34	4.86	5.41	4.97	4.86	4.49	4.83	5.58	4.47	2.76	3.25	4.16	5.88	55.52
Amite . . .	33	5.55	5.94	5.35	5.43	5.01	5.62	8.02	6.69	4.77	2.86	3.31	5.38	63.93
Baton Rouge	78	5.07	4.73	4.75	4.76	4.76	4.77	6.68	5.73	4.11	3.27	4.36	5.38	58.37
Lake Charles .	33	4.91	4.05	3.61	3.85	4.49	5.89	6.54	6.63	4.02	4.14	4.31	4.75	57.19
Monroe . .	35	4.72	4.39	5.11	4.80	4.00	4.20	4.82	3.96	2.74	3.17	3.80	4.94	50.65
New Orleans .	85	4.48	4.19	4.42	4.76	4.25	5.43	6.58	5.75	4.67	3.67	3.72	4.68	56.60
Shreveport .	50	3.82	3.34	4.03	4.70	4.09	3.39	3.38	2.67	2.94	2.86	3.60	4.23	43.05

[1] Data from United States Weather Bureau.

TABLE 16. NAVIGABLE WATERS IN LOUISIANA (IN ALL OF WHICH BOATS OPERATE DURING SOME SEASON OF THE YEAR) [1]

STREAMS	MILES OF NAVIGATION	HEAD OF NAVIGATION
Amite River	61	Port Vincent
Atchafalaya River	218	Red River
Barataria Bayou	78	Harvey's Canal
*Bartholomew Bayou	145	State Line, Ark.
Bayou Louis	25	Florence
Big Creek	20	Ferry Landing
Bistineau Lake	30	Minden
Black River	70	Mouth of Ouachita
Bodcau Lake	10	Bellevue
Bœuf River	300	Lake Lafourche
Bœuf Bayou	11	
Bunches Bend	12	
Calcasieu	132	
Cane River	60	Grand Ecore
Choctaw Bayou	25	Pinhook
Corney Creek	50	Spearsville
Courtableau Bayou	36	Washington
D'Arbonne Bayou	75	Farmerville
Des Glaises Bayou	75	Evergreen
Delarge Bayou	20	
Dorchite Bayou	6	Minden
Forks of Calcasieu	32	
Grand Caillou Bayou	13	
Lafourche Bayou	318	Donaldsonville
Lacombe Bayou	15	Bayou Lacombe
Little River (inc. Catahoula Lake)	150	Missouri Pacific
Louis Bayou	15	Bayou Castor
Macon Bayou	200	Floyd
Manchac Bayou	18	Hope Villa
Mermentau Bayou	81	Lake Arthur
*Mississippi River	560	St. Paul, Minn.
Natalbany River	12	Springfield
*Ouachita River	217	State Line
Palmyra Lake	25	Palmyra
*Pearl River	103	Carthage, Miss.
Petite Anse Bayou	8	Salt Mine
*Red River	510	Fulton, Okla.
Rouge Bayou	15	Shoals, Texas.

* Portion of navigable stream lying in other States.

[1] From Louisiana Public Service Commission.

TABLE 16 (*Continued*)

STREAMS	MILES OF NAVIGATION	HEAD OF NAVIGATION
Sabine Bayou	75	Catahoula Lake
Sabine River	387	
Teche Bayou	91	St. Martinsville
Tensas River	150	V., S. & P. R.R. Bridge
Tickfaw River	16	Springville
Terrebonne Bayou	27	
Tangipahoa River	15	
Tchefuncta Bayou	20	Covington
Vermilion Bayou	49	Pin Hook Bridge
Other Streams	155	
Total	4,794	

TABLE 17. VALUE OF ALL CROPS — 1919[1]

Total	dollars	206,182,548
Cereals	dollars	80,166,279
Other grains and seeds	dollars	1,568,057
Hay and forage	dollars	7,083,068
Vegetables	dollars	19,297,120
Fruits and nuts	dollars	3,054,854
All other crops	dollars	95,013,170
SELECTED CROPS (acres harvested and production)		
Cereals:		
Total	acres	1,996,690
	bushels	38,190,747
Corn	acres	1,504,970
	bushels	21,675,602
Oats	acres	33,443
	bushels	489,380
Wheat	acres	766
	bushels	5,788
Rough rice	acres	456,959
	bushels	16,011,667
Other grains and seeds:		
Dry peas	acres	22,230
	bushels	104,469

[1] From United States Bureau of the Census.

TABLE 17 (*Continued*)

Peanuts	acres	17,670
	bushels	262,888
Hay and forage:		
Total	acres	208,631
	tons	278,556
All tame or cultivated grasses	acres	101,326
	tons	139,287
Timothy alone	acres	1,489
	tons	1,702
Timothy and clover mixed	acres	1,376
	tons	1,898
Clover alone	acres	35,463
	tons	48,418
Alfalfa	acres	8,289
	tons	17,224
Other tame or cultivated grasses	acres	54,709
	tons	70,045
Wild, salt, or prairie grasses	acres	14,019
	tons	19,257
Small grains cut for hay	acres	6,260
	tons	6,372
Annual legumes cut for hay	acres	74,916
	tons	83,083
Silage crops	acres	3,938
	tons	21,058
Corn cut for forage	acres	5,910
	tons	3,563
Kafir, sorghum, etc., for forage	acres	1,834
	tons	4,149
Root crops for forage	acres	428
	tons	1,787
Vegetables:		
Potatoes (Irish or white)	acres	19,677
	bushels	971,705
Sweet potatoes and yams	acres	68,033
	bushels	5,324,419
Other vegetables	acres	11,668
Miscellaneous crops:		
Cotton	acres	1,343,334
	bales	306,791
Sorghum grown for sirup	acres	1,610
	tons	6,001

TABLE 17 (*Continued*)

Sirup made	gallons	70,003
Sugar cane	acres	234,049
	tons	2,435,683
Sirup made on farms	gallons	1,899,423
FRUITS AND NUTS		
Small fruits:		
Total	acres	4,052
	quarts	5,342,180
Strawberries	acres	4,007
	quarts	5,323,890
Orchard fruits:		
Total	trees not of bearing age	340,409
	trees of bearing age	582,743
	bushels harvested	526,771
Apples	trees not of bearing age	44,175
	trees of bearing age	47,037
	bushels harvested	43,910
Peaches	trees not of bearing age	231,909
	trees of bearing age	408,178
	bushels harvested	381,863
Pears	trees not of bearing age	27,336
	trees of bearing age	38,796
	bushels harvested	58,640
Plums and prunes	trees not of bearing age	36,108
	trees of bearing age	87,471
	bushels harvested	41,683
Grapes	vines not of bearing age	12,583
	vines of bearing age	19,601
	pounds harvested	67,203
Subtropical fruits:		
Figs	trees not of bearing age	33,451
	trees of bearing age	46,276
	pounds harvested	1,351,060
Oranges	trees not of bearing age	26,356
	trees of bearing age	104,382
	boxes harvested	37,458
Nuts	trees not of bearing age	101,964
	trees of bearing age	95,075
	pounds harvested	2,262,666

TABLE 18. VALUE PER ACRE OF SELECTED CROPS IN LOUISIANA[1]
1904–1925

YEAR	COTTON	CORN	OATS	SWEET POTATOES	RICE
1904	$24	$—	$—	$—	$19
1905	19	8	7	—	23
1906	26	10	8	—	25
1907	22	12	8	—	24
1908	13	14	13	54	26
1909	18	16	12	53	27
1910	17	13	10	60	23
1911	16	13	14	54	24
1912	21	12	11	55	31
1913	20	17	12	60	24
1914	11	14	14	56	30
1915	18	13	14	46	31
1916	33	21	13	59	41
1917	57	26	21	82	69
1918	45	26	25	96	60
1919	32	26	22	92	95
1920	19	16	19	94	40
1921	17	14	16	61	31
1922	34	14	15	56	32
1923	37	16	15	86	36
1924	32	13	17	79	47
1925	42	17	17	92	51

[1] Compiled by Louisiana State University, Division of Extension from United States Department of Agriculture Yearbooks and Estimates.

TABLE 19. LOUISIANA SALT PRODUCTION[1]

1922	435,621 tons
1923	363,026 tons
1924	400,586 tons
1925	500,378 tons
1926	502,849 tons
1927	598,597 tons

[1] From the State Department of Conservation.

TABLE 20. NUMBER OF LIVE STOCK IN LOUISIANA [1]
1880–1925

KIND	1880	1890	1900	1910	1920	1925
Horses	104,428	126,777	168,786	181,286	178,756	131,748
Mules	76,798	87,539	135,420	131,554	180,115	173,643
All Cattle	448,660	570,785	718,514	804,795	804,241	703,255
Dairy Cattle	146,454	166,507	184,815	279,097	316,532	149,855
Other Cattle	302,206	404,278	533,699	525,698	487,709	563,400
Swine	633,489	569,935	788,425	1,327,605	850,562	527,954
Sheep	135,633	186,167	219,844	178,287	129,816	41,579 [1]

[1] Louisiana State Tax Commission Report, 1924.
[1] From Louisiana State University, Division of Agricultural Extension.

TABLE 21. RICE PRODUCTION IN THE UNITED STATES [1]

STATE	AVERAGE 1921–1925 1,000 BUSHELS	1925 1,000 BUSHELS	1926 1,000 BUSHELS
Missouri	175	300	610
South Carolina	147	80	85
Georgia	64	51	60
Mississippi	17	18	18
Arkansas	6,765	7,525	10,547
Louisiana	16,677	14,319	16,282
Texas	5,962	6,216	6,142
California	5,965	4,800	7,986
United States	35,772	33,309	41,730

[1] From United States Yearbook of Agriculture, 1927.

TABLE 22. LUMBER PRODUCTION, LOUISIANA AND THE UNITED STATES[1]

1907–1925

YEAR	LOUISIANA'S RANK AMONG STATES	LOUISIANA BOARD FEET	UNITED STATES, INCLUDING LOUISIANA	PER CENT LOUISIANA OF TOTAL
1907	2nd	2,972,119,000	40,256,154,000	7.4
1908	2nd	2,772,421,000	33,224,369,000	6.3
1909	2nd	3,551,918,000	44,509,761,000	8.0
1910	2nd	3,733,900,000	40,018,282,000	9.3
1911	2nd	3,566,456,000	37,003,207,000	9.6
1912	2nd	3,876,211,000	39,158,414,000	9.9
1913	2nd	4,161,560,000	38,387,009,000	10.8
1914	1st	3,956,434,000	37,346,023,000	10.6
1915	2nd	3,900,000,000	38,000,000,000	10.3
1916	2nd	4,200,000,000	39,807,251,000	10.5
1917	2nd	4,210,000,000	35,831,239,000	11.7
1918	2nd	3,450,000,000	31,890,494,000	10.8
1919	2nd	3,163,871,000	34,552,076,000	9.2
1920	3rd	3,120,000,000	33,798,800,000	9.2
1921	3rd	3,215,110,000	29,960,864,000	10.7
1922	3rd	3,386,000,000	31,568,880,000	10.7
1923	3rd	3,554,212,000	37,165,505,000	9.6
1924	3rd	3,396,940,000	35,930,986,000	9.5
1925	3rd	3,293,091,000	38,338,641,000	8.6

[1] Data from United States Forest Service.

TABLE 23. LUMBER PRODUCTION IN LOUISIANA — 1925 [1]

KIND OR SPECIES	LOUISIANA PRODUCTION M FT. B. M.	PER CENT OF U. S. TOTAL	AVERAGE VALUE PER M FT. B. M. F. O. B. MILL	TOTAL VALUE F. O. B. MILL
Yellow Pine	2,289,846	17.3	$30.45	$69,725,810.70
Cypress	274,040	30.4	46.39	12,712,715.60
Red Gum	271,415	24.6	31.63	8,584,856.45
Oak	221,863	10.4	35.95	7,975,974.85
Tupelo	100,395	45.6	24.27	2,436,586.65
Ash	33,589	18.8	45.01	1,511,840.89
Cottonwood	17,746	12.5	28.90	512,859.40
Elm	14,915	7.8	30.26	451,327.90
Yellow Poplar	8,579	2.3	34.43	295,374.97
Hickory	5,143	6.5	38.55	198,262.65
Beech	2,037	1.1	29.21	59,500.77
Sycamore	1,762	7.2	29.59	52,137.58
Cedar	386	.1	38.80	14,976.80
Maple	201	.02	39.18	7,875.18
Walnut	153	.2	111.53	17,064.09
Basswood	32	.02	39.76	1,272.32
All Others	50,989*	.3‡	63.06	3,215,366.34
Total	3,293,091	8.6	$23.61	$107,773,803.14

* Includes mahogany, magnolia, willow, pecan, cherry, dogwood, hackberry, and locust.

‡ Includes many species not found in Louisiana, such as Douglas fir, balsam, spruce, etc.

[1] Data from United States Forest Service.

TABLE 24. ESTIMATED GAS PRODUCTION BY YEARS[1]
(Cubic Feet)

Prior to 1918	48,303,532,000
1918	44,544,944,500
1919	62,240,585,000
1920	60,625,156,625
1921	62,659,857,900
1922	76,595,852,075
1923	111,891,169,225
1924	159,566,050,600
1925	156,614,949,400
1926	159,296,331,829
1927	181,169,793,000
Total	1,123,508,222,154

[1] From the State Department of Conservation.

TABLE 25. OIL PRODUCTION, NORTH LOUISIANA FIELDS [1]
(In Barrels)

	1920*	1921	1922	1923	1924	1925	1926	1927	TOTAL
Bossier Parish:									
Bellevue Field	. . .	. . .	1,479,905	2,250,057	1,745,980	1,171,358	829,394	476,231	7,952,925
Elm Grove Field	. . .	. . .	290,721	473,730	283,554	240,177	232,917	245,790	1,766,889
Caddo Parish:									
All subdivisions	82,085,848	5,391,166	4,231,555	3,998,593	4,251,319	4,087,673	4,669,421	5,703,434	114,419,009
Claiborne Parish:									
Haynesville Field	. . .	2,964,972	20,299,911	10,905,194	6,160,607	4,771,337	3,439,064	2,631,817	51,172,902
Homer Field	24,177,001	12,736,884	6,293,809	3,801,938	2,891,580	2,345,000	2,105,255	1,751,989	56,103,456
De Soto Parish	12,608,300	719,000	531,000	429,000	353,000	431,000	427,850	444,450	15,943,600
Grant Parish:									
Urania Field	. . .	. . .	. . .	. . .	. . .	. . .	3,800	56,956	60,765
La Salle Parish:									
Urania Field	. . .	. . .	. . .	. . .	. . .	16,708	4,049,444	3,556,276	7,622,428
Winn Parish:									
Urania Field	. . .	. . .	. . .	. . .	. . .	. . .	125,428	108,810	234,238
Red River Parish	21,494,340	2,844,000	1,778,000	1,560,665	1,231,000	937,000	912,920	945,730	31,703,655
Sabine Parish:									
Pleasant Hill Field	. . .	. . .	. . .	. . .	. . .	. . .	. . .	226,700	226,700
Webster Parish:									
Cotton Valley Field	. . .	. . .	. . .	. . .	1,176,011	3,337,060	2,787,744	1,986,669	9,287,484
Total North La.	140,365,489	24,656,022	34,904,901	23,419,177	18,093,051	17,337,313	19,583,237	18,134,852	296,494,044
Total South La.	63,015,432	1,708,536	1,836,600	2,234,088	2,359,409	3,346,441	4,162,819	5,032,387	83,695,710
Total for State	203,380,921	26,364,558	36,741,501	25,653,265	20,452,460	20,683,754	23,746,056	23,167,239	380,189,754

* Prior to and including 1920.

[1] From the State Department of Conservation.

Table 26. Oil Production, South Louisiana Fields [1]
(In Barrels)

	1920*	1921	1922	1923	1924	1925	1926	1927	Total
Acadia Parish:									
Jennings Field	41,274,467	187,536	156,600	149,378	142,406	271,375	385,417	343,376	42,910,555
Calcasieu Parish:									
Edgerly Field	5,457,384	219,400	150,200	125,480	159,444	179,506	214,775	407,598	6,913,787
Vinton Field	15,462,321	1,256,600	1,495,800	1,943,230	1,930,621	2,409,930	2,215,270	1,811,139	28,524,911
Lockport Field	. . .	. . .	. . .	. . .	115,629	472,198	1,305,547	2,026,261	3,919,635
Starks Field	. . .	. . .	. . .	. . .	. . .	. . .	. . .	264,113	264,113
Sulphur Mine	. . .	. . .	. . .	. . .	. . .	. . .	2,064	29,506	31,570
Cameron Parish:									
Hackberry or Kelso Bayou Field	. . .	. . .	. . .	. . .	. . .	. . .	. . .	42,925	42,925
Sweet Lake Field	. . .	. . .	. . .	. . .	. . .	. . .	10,755	76,465	87,220
Iberia Parish:									
Fausse Pointe or Loreauville Field	. . .	. . .	. . .	. . .	. . .	. . .	10,926	16,787	27,713
Jefferson Davis Parish:									
Welsh Field	354,776	. .	. . .	. . .	1,309	7,432	14,708	10,190	388,415
St. Martin Parish:									
Anse La Butte Field	466,484	45,000	34,000	16,000	10,000	6,090	3,355	4,827	584,866
Total	63,015,432	1,708,536	1,836,600	2,234,088	2,359,409	3,346,441	1,162,817	5,032,387	83,695,710

* Prior to and including 1920.

[1] From the State Department of Conservation.

TABLE 27. NATURAL GAS, LOUISIANA AND OTHER STATES — 1926 [1]
(Millions of Cubic Feet)

STATE	PRODUCTION	IMPORTS	CONSUMPTION	EXPORTS
Arkansas	43,566	9,064	52,630	. . .
California	204,915	. . .	204,915	. . .
Colorado	554	. . .	504	50
Illinois	3,808	. . .	3,808	. . .
Indiana	901	1,361	1,854	408
Kansas	38,095	29,279	61,142	6,232
Kentucky	10,410	9,311	18,126	1,595
Louisiana	159,296	5,945	150,759	14,482
Michigan	(A)		(A)	
Missouri	1	5,818	5,819	. . .
Montana	2,283	1,012	3,295	. . .
New Mexico	921	. . .	921	. . .
New York	7,027	10,933	17,864	96
Ohio	47,363	74,426	115,719	6,070
Oklahoma	286,421	414	244,993	42,842
Pennsylvania	107,089	33,528	125,836	14,781
South Dakota	10	. . .	10	. . .
Tennessee	12	. . .	12	. . .
Texas	175,392	18,746	187,341	6,797
West Virginia	180,223	8,723	72,784	116,162
Wyoming	46,567	50	45,605	1,012
Other (B)	38	751	789	. . .
Totals	1,314,892	209,361	1,314,726	209,527

(A) — Less than 1,000,000 cubic feet.

(B) — Alaska, Maryland (consumption only), and North Dakota.

[1] Compiled by State Department of Conservation from Bureau of Mines. "Natural Gas in 1926."

TABLE 28. ESTIMATED METERED GAS PRODUCTION BY FIELDS (CU. FT.)[1]

YEAR	CADDO PARISH (EXCEPT WASKOM AND ELM GROVE)	DE SOTO PARISH	RED RIVER PARISH	ELM GROVE FLD. (BOSSIER AND CADDO PSH.)
Prior to 1918 est.	33,000,000,000*	10,000,000,000*		703,532,000
1918	15,603,420,000	6,369,139,000	979,711,000	15,310,071,000
1919	15,820,211,000	4,345,799,000	1,541,567,000	19,595,960,000
1920	7,460,938,000	3,700,047,825	1,368,335,000	26,904,390,000
1921	5,812,957,000	2,123,945,000	355,152,000	20,266,160,000
1922	4,911,491,000	1,367,004,000	117,573,000	21,479,736,000
1923	3,369,285,000	1,246,261,999	788,542,000	13,294,431,000
1924	3,316,600,000	1,361,568,000	336,738,000	8,460,102,000
1925	4,839,543,000	1,683,830,000	321,473,000	†7,298,665,000
1926	9,003,080,000	1,779,221,000	321,298,000	§5,814,191,000
1927	11,956,293,000	1,819,814,000	362,510,000	§7,598,818,000
Total	115,093,818,000	35,796,628,825	6,492,929,000	146,726,056,000

YEAR	CADDO PARISH (WASKOM FIELD)	WEBSTER PSH. (COTTON VALLEY FIELD)	WEBSTER PSH. (CLEASON FIELD)	BOSSIER AND WEBSTER PARISHES (SPRING HILL FIELD)
1922	. . .	. . .	6,297,303,500	
1923	. . .	9,950,000	5,772,197,900	272,752,000
1924	135,755,000	1,469,891,000	5,141,656,100	3,543,471,000
1925	1,270,391,100	2,210,695,000	9,347,084,000	3,500,290,000
1926	1,053,301,500	3,793,083,000	9,592,886,000	5,840,237,500
1927	2,047,307,000	5,341,222,700	10,409,651,100	4,119,347,500
Total	4,506,754,600	12,824,841,700	46,560,778,900	17,276,098,000

* Not metered. † Includes Sligo Extension. § Includes Sligo and Caspiana Extensions.

YEAR	BOSSIER PARISH (CARTERVILLE FIELD)	WINN PARISH
1927	2,740,432,000	3,225,000

YEAR	MOREHOUSE, OUACHITA AND UNION PARISHES (MONROE FIELD)	RICHLAND PARISH FIELD	TERREBONNE PARISH (HOUMA FIELD)	SABINE PARISH
1916	*100,000,000	. . .	. . .	. . .
1917	*4,500,000,000	. . .	. . .	. . .
1918	6,093,000,000	. . .	189,603,500	. . .
1919	20,291,000,000	. . .	646,048,400	. . .
1920	20,300,503,000	. . .	890,942,800	. . .
1921	33,358,327,000	. . .	743,316,900	. . .
1922	41,796,843,000	. . .	625,901,575	. . .
1923	86,582,443,000	. . .	555,307,325	. . .
1924	135,204,603,000	. . .	595,666,500	. . .
1925	125,496,213,000	. . .	646,765,300	. . .
1926	121,614,208,000	950,000	483,875,829	. . .
1927	132,895,666,000	1,837,401,000	7,141,000	30,931,000
Total	728,232,806,000	1,838,351,000	5,384,569,129	30,931,000

* Not metered. [1] From the State Department of Conservation.

TABLE 29. ESTIMATED TOTAL GAS PRODUCTION BY FIELDS[1]
(Cubic Feet)

Caddo Parish (except Waskom)	115,093,818,000
Waskom Field (La. Side)	4,506,754,600
Elm Grove Field	146,726,056,000
Carterville Field	2,740,432,000
De Soto Parish	35,796,628,825
Red River Parish	6,492,929,000
Monroe Field	728,232,806,000
Richland Field	1,838,354,000
Sabine Parish	30,931,000
Cotton Valley (Webster Psh.)	12,824,841,700
Gleason Field (Webster Psh.)	46,560,778,900
Spring Hill Field	17,276,098,000
Terrebonne Psh. (Houma Fld.)	5,384,569,129
Winn Parish	3,225,000
Total	1,123,508,222,154

[1] From the State Department of Conservation, Report of 1926-1928.

TABLE 30. LOUISIANA SULPHUR PRODUCTION[1]

YEAR	TONS	YEAR	TONS
1894	5	1910	246,510
1895	500	1911	204,220
1896	1,683	1912	786,605
1897	1,145	1913	478,565
1898	1,385	1914	374,470
1899	NONE	1915	379,885
1900	172	1916	383,065
1901	294	1917	595,130
1902	4,814	1918	918,700
1903	23,702	1919	526,250
1904	80,142	1920	37,635
1905	218,950	1921	795,980
1906	288,560	1922	1,146,860
1907	185,772	1923	768,315
1908	362,896	1924	329,230
1909	270,725	TOTAL	9,412,165

[1] From the State Department of Conservation.

TABLE 31. CARBON BLACK PRODUCTION[1]

YEAR	U. S. TOTAL (POUNDS)	LA. TOTAL (POUNDS)	LA. PERCENTAGE OF TOTAL	CUBIC FEET OF GAS USED LOUISIANA	CUBIC FEET OF GAS USED UNITED STATES	AVERAGE LBS. PER M CU. FT. (LOUISIANA)	AVERAGE LBS. PER M CU. FT. (UNITED STATES)
1919 . . .	52,056,941	14,024,606	27.0	21,200,000,000	. . .	. . .	. . .
1920 . . .	51,321,892	18,565,498	36.2	21,000,000,000	. . .	. . .	. . .
1921 . . .	59,766,315	31,003,615	51.9	32,072,000,000	50,565,000,000	.97	1.2
1922 . . .	67,795,129	41,966,856	62.0	38,004,000,000	53,629,000,000	1.1	1.3
1923 . . .	138,262,648	101,398,881	73.3	82,974,000,000	109,096,000,000	1.2	1.3
1924 . . .	186,872,034	144,601,550	77.5	127,812,000,000	156,514,000,000	1.1	1.2
1925 . . .	177,417,378	130,161,585	73.2	118,869,000,000	149,855,000,000	1.09	1.2
1926 . . .	180,576,176	129,564,840	72.2	108,145,251,000	139,400,000,000	1.19	1.3
1927 . . .	. . .	126,563,477	. . .	99,282,477,000	. . .	1.28	. . .

[1] From the State Department of Conservation.

TABLE 32. LOUISIANA'S NATURAL RESOURCE PRODUCTION AND VALUATION PER ANNUM, 1924

	PRODUCTION	VALUATION	
Minerals:			
Oil	20,194,049 Bbls.	$29,281,371.05	
Natural Gas (At 3c per thousand cubic feet would have a gross valuation of $4,784,031.33)	159,467,711,123 Cu. Ft.		
Producing:			
Carbon Black	141,675,944 Lbs.	8,854,746.30	
Gasoline	46,000,000 Gals.	4,200,000.00	
Gas (consumed as gas)	25,468,000 Cu. Ft.	764,046.00	
Sulphur	329,230 Tons	3,621,530.00	
Salt	400,586 Tons	1,996,911.00	
Gravel	231,321 Cu. Yds.	578,302.50	
Sand	436,571 Cu. Yds.	902,284.75	
Shell	704,705 Cu. Yds.	1,233,233.75	
Limestone	169,698 Tons	70,197.00	
		$51,502,622.35	$ 51,502,622.35
Forest Products:			
Lumber (At $5.87 per thousand stumpage would have a valuation of $20,891,911.00)	3,599,099,090 Bd. Ft.		
Mill Value		89,262,203.00	
Crude Gum	212,873 Bbls.		
Producing:			
Turpentine	2,767,300 Gals.	2,490,570.00	
Rosin	185,000 Rd. Bbls.	2,035,000.00	
Moss	25,000,000 Lbs.	750,000.00	
Charcoal	146,600 Tons	2,000,000.00	
		$96,537,773.00	$ 96,537,773.00
Fisheries:			
Freshwater Fish	27,202,721 Lbs.	2,117,659.00	
Saltwater Fish	9,325,000 Lbs.	1,423,750.00	
Saltwater Shrimp	33,289,403 Lbs.	1,712,845.00	
River Shrimp		185,000.00	
Terrapin		160,000.00	
Turtles		50,000.00	
Frogs	1,200,000 Lbs.	210,000.00	
Crabs		75,000.00	
Mussel Shells	625,000 Lbs.	13,765.00	
		$ 5,948,019.00	$ 5,948,019.00
Oysters:	2,607,304 Bu.	3,909,956.00	$ 3,909,956.00
Furs:			
Muskrat	6,236,165 Pelts	5,177,096.00	
Opossum	287,180 Pelts	258,462.00	
Raccoon	145,810 Pelts	583,240.00	
Mink	84,301 Pelts	421,505.00	
Skunk	14,752 Pelts	18,440.00	
Otter	2,110 Pelts	31,650.00	
Miscellaneous	947 Pelts	947.00	
Total Fur Pelts	6,771,265 Pelts	$ 6,491,340.00	$ 6,491,340.00
Alligators	21,855 Pelts	$ 20,160.00	20,160.00
Total Annual Valuation			$166,409,870.35

These figures represent the output of 1924, with a few exceptions, when 1923 production figures had to be used.

TABLE 33. STATEMENT OF ALL INDUSTRIES: 1919

	NUMBER OF ESTABLISHMENTS	PERSONS ENGAGED IN THE INDUSTRY	VALUE OF PRODUCTS
			Dollars
All industries	2,617	112,523	676,189,770
Artificial stone products	4	13	24,261
Automobile bodies and parts	10	206	731,887
Automobile repairing	128	779	1,548,329
Awnings, tents, and sails	7	77	402,933
Bags, other than paper, not including bags made in textile mills	5	743	18,310,111
Bone and carbon black	7	156	1,002,490
Bookbinding and blank-book making	7	54	91,045
Boots and shoes	4	346	1,136,027
Boxes, cigar	3	79	141,324
Boxes, paper, not elsewhere specified	6	363	794,883
Boxes, wooden packing, except cigar boxes	17	1,389	4,173,296
Brass, bronze, and copper products	6	59	234,769
Bread and other bakery products	309	2,705	12,673,135
Biscuit and crackers	4	585	2,486,690
Bakery products, other than biscuit and crackers	305	2,120	10,186,445
Brick	18	506	740,610
Brooms, from broom corn	12	163	468,562
Canning and preserving, fish	16	437	795,223
Canning and preserving, fruits and vegetables	11	197	818,309
Canning and preserving, oysters	3	47	110,742
Carriage and wagon materials	3	32	76,124
Carriages and wagons, including repairs	21	184	414,407
Carriages and wagons	16	169	386,566
Repair work only	5	15	27,841
Cars and general shop construction and repairs by electric-railroad companies	7	440	1,066,129
Cars and general shop construction and repairs by steam-railroad companies	28	4,635	9,519,059
Chemicals	5	87	312,806
Clothing, men's	16	1,102	3,032,589

TABLE 33 (*Continued*)

	NUMBER OF ESTABLISHMENTS	PERSONS ENGAGED IN THE INDUSTRY	VALUE OF PRODUCTS
			Dollars
Clothing, women's	12	318	1,095,053
Coffee and spice, roasting and grinding	29	1,017	7,935,101
Confectionery and ice cream	41	1,029	5,096,473
Confectionery	20	808	3,276,673
Ice cream	21	221	1,819,800
Cooperage	19	883	3,214,694
Copper, tin, and sheet-iron work	43	555	2,152,126
Druggists' preparations	3	18	43,769
Electrical machinery, apparatus, and supplies	5	50	154,003
Engraving, steel and copper plate, including plate printing	5	49	98,596
Fertilizers	6	677	4,197,285
Flavoring extracts	4	45	264,101
Flour-mill and gristmill products	17	74	1,384,074
Food preparations, not elsewhere specified	42	2,498	34,405,973
Breadstuff preparations; lard compounds and other substitutes; and sweetening sirups, other than cane	11	1,846	27,883,036
Macaroni, vermicelli, and noodles	17	190	1,398,405
All other food preparations for human consumption	5	223	407,767
Prepared feed for animal and fowl consumption	9	239	4,716,765
Foundry and machine-shop products	90	2,563	10,697,272
Boiler shops	7	177	899,450
Foundries	5	76	234,048
Machine shops	70	1,732	7,186,808
Machine shop and foundry combined	8	578	2,376,966
Furniture	17	670	1,915,893
Wood furniture, other than rattan and willow	12	570	1,552,474
Metal furniture, and store and office fixtures	5	100	363,419
Hats, wool felt	3	22	34,436
Ice, manufactured	70	1,022	3,990,334

TABLE 33 (*Continued*)

	NUMBER OF ESTABLISHMENTS	PERSONS ENGAGED IN THE INDUSTRY	VALUE OF PRODUCTS
			Dollars
Jewelry	7	103	236,499
Liquors, distilled, grain alcohol	6	365	8,246,496
Liquors, malt	8	519	5,777,944
Lumber and timber products	511	45,107	120,716,435
Lumber, planing-mill products, not including planing mills connected with sawmills	51	1,279	5,570,041
Marble and stone work, monuments and tombstones	15	146	603,460
Mattresses and spring beds, not elsewhere specified	13	348	1,619,085
Mineral and soda waters	79	636	2,777,045
Oil and cake, cottonseed	28	1,937	57,161,578
Patent medicines and compounds	17	176	786,408
Perfumery and cosmetics	5	77	176,319
Petroleum, refining	10	3,143	75,023,726
Photo-engraving	4	34	94,541
Pickles, preserves, and sauces	8	112	422,111
Printing and publishing, book and job	109	1,129	2,940,703
Job printing	104	1,092	2,879,689
Book publishing without printing, linotype work, and typesetting	5	37	61,014
Printing and publishing, newspapers and periodicals	149	1,532	4,979,417
Printing and publishing	14	891	3,639,083
Printing, publishing, and job printing	101	525	980,002
Publishing without printing	34	116	360,332
Rice, cleaning and polishing	46	1,889	41,220,471
Roofing materials	3	71	245,370
Saddlery and harness	8	179	948,575
Sausage, not made in slaughtering and meat-packing establishments	8	40	324,638
Shipbuilding, steel	6	3,700	12,432,094
Shipbuilding, wooden, including boat building	16	2,103	5,165,774
Shirts	5	46	89,251
Slaughtering and meat packing	3	276	849,326

TABLE 33 (*Continued*)

	NUMBER OF ESTABLISHMENTS	PERSONS ENGAGED IN THE INDUSTRY	VALUE OF PRODUCTS
			Dollars
Soap	6	36	70,322
Structural ironwork, not made in steel works or rolling mills	10	113	368,072
Sugar, including refining	192	8,848	141,842,924
Tobacco, cigars and cigarettes	46	2,391	8,221,413
Turpentine and rosin	33	2,771	5,591,289
Upholstering materials, not elsewhere specified	18	238	949,473
Window and door screens	6	32	61,275
Wood distillation	4	91	629,022
Wood preserving	6	334	2,740,393
Wood, turned and carved	6	107	287,526
All other industries	116	6,326	31,722,521

TABLE 34. LOUISIANA FUR PELTS[1]

	1924–25	1925–26	1926–27	1927–28
Muskrat	6,236,165	3,613,765	3,036,749	2,858,834
Opossum	287,180	198,490	356,184	339,210
Raccoon	145,810	128,516	127,882	103,544
Mink	84,201	51,447	43,896	67,284
Otter	2,110	2,024	2,554	1,190
Skunks	14,752	30,866	27,671	22,348
Miscellaneous pelts	917	1,058	1,095	1,072
Total	6,791,265	4,026,166	3,596,031	3,393,482
Value	$6,490,340	$5,528,982	$6,932,107	$5,125,363

[1] From the State Department of Conservation.

TABLE 35. NUMBER AND RATE OF BIRTHS, DEATHS, AND PRINCIPAL DISEASES

	1925	1924	1923	1922	1921	1920
Deaths all causes	24,892	24,884	22,426	20,612	20,093	21,677
Death Rate per 1,000 pop.	13.2	13.3	12.1	11.2	11.0	12.0
Births	43,067	43,117	42,120	40,011	39,003	37,215
Birth Rate per 1,000 pop.	22.9	23.1	22.7	21.8	21.4	20.5
Deaths from T. B. of Lungs	1,918	1,926	1,982	2,052	2,663	2,361
Death Rate from T. B. of Lungs per 100,000 pop.	102.1	103.3	107.1	111.8	113.4	130.7
Cases T. B. of Lungs	2,661	25,52	2,596	2,673	3,246	1,767
Deaths Typhoid	639	410	265	323	325	286
Death Rate Typhoid per 100,000 pop.	34.0	21.9	14.3	17.6	17.8	15.8
Cases Typhoid	2,318	1,252	922	1,085	945	813
Deaths Malaria	252	282	313	401	463	613
Death Rate Malaria per 100,000 pop.	13.4	15.1	17.1	21.8	25.4	33.9
Cases Malaria	828	1,104	1,145	1,595	2,125	2,273
Deaths Diphtheria	128	115	151	151	110	112
Death Rate Diphtheria per 100,000 pop.	6.8	6.2	8.1	8.2	6.0	6.2
Cases Diphtheria	947	971	1,251	1,084	743	599
Deaths Smallpox	9	2	4	2	55	163
Death Rate Smallpox per 100,000 pop.	0.5	0.1	0.2	0.1	3.0	9.0
Cases Smallpox	883	489	693	645	1,419	1,564
Death Cancers (all forms)	1,189	1,157	1,096	1,101	958	871
Death Rate Cancers per 100,000 pop.	63.3	62.1	59.2	59.9	52.6	48.2
Deaths Heart Diseases	3,640	3,566	2,961	2,502	2,385	2,372
Death Rate Heart Diseases per 100,000 pop.	193.7	191.3	160.1	135.2	131.0	131.3
Deaths Puerperal Causes	465	444	405	386	399	429
Death Rate Puerperal Causes per 1,000 live births	10.8	10.3	9.6	9.6	10.2	11.5
Infant Mortality Rate per 1,000 live births	88.6	93.6	82.3	80.9	85.2	86.1

TABLE 36. INSTITUTIONS RECEIVING STATE AID BY ACTS OF LOUISIANA STATE LEGISLATURE

	APPROPRIATION		
	1924–1925	1928–1929	1929 1930
Correctional			
Louisiana Training Institute, Monroe, La.	$68,000.00	$97,417.52	$97,417.52
State Industrial School for Girls, Ball, La.		15,000.00	20,000.00
Dispensaries			
New Orleans Hospital and Dispensary for Women and Children	15,000.00	15,000.00	15,000.00
Educational			
Louisiana Polytechnic, Ruston, La.	195,000.00	235,950.00	235,950.00
Louisiana State Normal College, Natchitoches, La.	231,000.00	279,510.00	279,510.00
Louisiana State University, Baton Rouge, La.	997,500.00	890,000.00	890,000.00
Southern University (Colored), Scotland, La.	50,000.00	81,500.00	71,500.00
Southwestern Louisiana Institute of Liberal and Technical Training, Lafayette, La.	175,000.00	211,250.00	211,250.00
Educational, Defective			
Milne Asylum for Destitute Orphan Girls, New Orleans, La.	10,000.00	5,000.00	5,000.00
State Colony and Training School for Feeble-Minded, Alexandria, La.	82,500.00	162,000.00	163,000.00

TABLE 36 (*Continued*)

	APPROPRIATION		
	1924–1925	1928–1929	1929–1930
State School for Blind, Baton Rouge, La.	$45,000.00	$55,000.00	$155,000.00
State School for Blind Negroes, Baton Rouge, La.	5,000.00	10,000.00	10,000.00
State School for Deaf, Baton Rouge, La.	75,000.00	190,000.00	165,000.00
Hospitals			
Charity Hospital, New Orleans	768,667.00	926,293.80	938,500.00
Charity Hospital, Shreveport, La.	225,000.00	261,800.00	301,800.00
Eye, Ear, Nose, and Throat Hospital, New Orleans, La.	3,000.00	3,000.00	3,000.00
Hospitals for Insane			
Central Louisiana Hospital, Pineville, La.	318,500.00	371,500.00	356,000.00
East Louisiana Hospital, Jackson, La.	590,500.00	726,455.00	754,827.00
Penal			
Louisiana State Penitentiary, Baton Rouge, La.			
Out of the Penitentiary Fund	801,000.00	733,000.00	731,250.00
Out of the General Fund		150,000.00	
Miscellaneous			
Soldiers' Home of Louisiana, New Orleans, La.	14,650.00	25,000.00	25,000.00

TABLE 37. SUMMARY OF ECONOMIC PROGRESS[1]

Total Area, 48,506 Square Miles; Land, 45,409 Square Miles; Water, 3,097 Square Miles

	1900	1910	1927	1928
Population	1,381,625	1,656,388	1,934,000	1,950,000
Property, true value	$815,158,000	†$1,989,813,000	‡$3,416,860,000	¶$3,589,000,000
Assessed value property	$276,659,407	$527,773,950	$1,724,954,000	$1,733,553,000
Manufactures:				
Capital	$100,874,729	$221,816,398	. . .	*$462,209,000
Products, value	$111,397,919	$223,948,638	$638,361,215	. . .
Mines, Quarries, and Wells				
Capital	. . .	$13,207,232	. . .	*$97,620,406
Products, value	$279,000	$6,547,050	. . .	*$40,016,535
Cotton Manufacturing:				
Products, value	. . .	. . .	. . .	. . .
Spindles, number active	55,600	88,136	100,764	100,764
Looms, number active	1,584	1,832	2,436	1,465
Cotton consumed, bales	14,564	10,342	45,090	50,762
Cottonseed Oil Mills:				
Capital	. . .	$7,163,820	. . .	*$13,997,927
Products, value	$7,026,452	$13,084,586	$8,643,000	$8,615,000
Furniture Manufacturing:				
Products, value	. . .	. . .	$2,601,959	. . .
Lumber cut, feet	1,113,423,000	3,733,900,000	§2,889,530,000	¶2,385,724,000
Mineral products, value	$789,219	$10,119,993	§$62,204,000	¶$51,267,000
Petroleum, barrels	. . .	6,841,395	22,818,000	21,626,000
Salt mined, tons	. . .	. . .	§520,400	¶606,110
Total land area, acres	. . .	. . .	. . .	**29,061,760
All land in farms, acres	11,059,127	10,439,481	*10,019,822	**8,837,502
Improved land, acres	4,666,532	5,276,016	*5,626,226	**5,064,031
Number of farms	115,969	120,546	*135,463	**132,450
Value all farm property	$198,536,906	$301,220,988	*$589,826,679	**$385,910,844
Value farm land	$107,730,210	$187,803,277	*$283,618,162	**$251,737,972
Farm products, value	$72,667,000	$90,402,000	$175,159,000	$205,288,000
Farm crops, value	$62,654,000	$73,536,000	$150,020,000	$161,572,000
Farm crops, acres	3,409,000	3,586,000	3,880,000	4,605,000
Cotton Crop:				
Acreage	1,376,000	975,000	1,542,000	1,985,000
Bales, number	699,000	246,000	548,000	685,000
Value lint	$23,523,000	$17,180,000	$52,608,000	$61,308,000
Value seed	$3,482,000	$2,759,000	$8,019,000	$9,880,000
Tobacco crop, pounds	102,100	172,418	400,000	405,000
Value	$20,488	$42,617	$180,000	$181,000
Acreage	275	519	1,000	1,000
Grain Crop:				
Corn, bushels	24,703,000	42,055,000	20,318,000	21,114,000
Value	$12,351,000	$23,130,000	$18,286,000	$19,847,000
Acreage	1,453,000	1,782,000	1,161,000	1,242,000
Oats, bushels	614,000	774,000	612,000	1,078,000
Value	$246,000	$379,000	$404,000	$701,000
Acreage	34,000	36,000	35,000	44,000
Livestock:				
Cattle, number	670,000	805,000	579,000	585,000
Sheep, number	220,000	178,000	107,000	110,000
Swine, number	788,000	1,328,000	460,000	437,000
Horses, number	194,000	181,000	107,000	102,000
Mules, number	144,000	132,000	167,000	167,000
Banking:				
Aggregate resources	. . .	$171,561,708	$529,314,000	$535,139,000
Paid-in capital	. . .	$21,661,400	$33,386,000	$32,086,000
Individual deposits	$36,276,000	$101,813,188	$369,023,000	$365,055,000
Railroad mileage	2,824	5,554	5,112	5,099
Motor vehicles, number	. . .	††7,000	255,000	264,293
Highway expenditures	††$345,452	‡‡$1,777,372	$19,000,000	$16,750,000
Public schools, expenditures	$1,135,000	$4,252,000	‖$19,432,339	§§19,741,168

*Census 1920. †1912. ‡1922. ¶1927. §1926. **1925. ††1904. ‡‡1914. ‖1924.

[1] From *Manufacturers Record Blue Book*, 1929

INDEX

INDEX

Abbeville, town of, 69; 71; 259
Acadians, 15; 253
Acquets and gains, Community of, 344; 345
AGRAMONTE, DR. ARISTIDE, 262
Alexandria, 12; 80; Central Louisiana Fair held at, 248; distributing center for wholesale products, 246; educational advantages at, 247; geographical center of state, 246; industries at, 246; institutions located at, 247; medicinal wells, 248; municipally owned utilities, 248; recreation afforded, 247; state forest near, 322
ALLEN, HENRY WATKINS, 281
All Saints' Day, observance of, 23; 237
Alligator, The, 121; 408
Alluvial soils, 35; 36; 43; 130; 372
Amite, town of, 208; 259
Animal products, manufacture of, 211
Animals, native, 315
ASWELL, JAMES B., 361
Atchafalaya Bay, 38; 71; 113
Atchafalaya River, 29; 63–66; 322
Atlantic Coastal Plain, eras in formation of, 25; 44
Attakapas prairie, 15
AUDUBON, JOHN JAMES, 301; 317
Audubon Park, 232
Awakening, The (Chopin), 298

Back lands, 26; 43
Bagasse, manufacture of, into celotex, 200
Bags, making of, 207
Bank Examiner, 336
Baptist Bible Institute, 234
Baptist Hospital, 367
Baptist Orphanage (Monroe), 250
Barges, 87; 196
Bastrop, town of, 169; 193; 259
Baton Rouge, 7; educational advantages at, 245; geographical position of, 30; 34; 244; 374; home of State University, 245; industries at, 178; 244; institutions located at, 246; Lady of the Lake Sanitarium at, 246; 367; uniqueness of State Capitol, 246
Bayou Folk (Chopin), 298
Bayou Teche, 25; 69; 255
Bays, how formed, 38
BEAUREGARD, P. G. T., 12; 217; 289
Beauvoir, 296
Bee industry, 144–146
BEMISS, DR. S. M., 291
BENJAMIN, JUDAH P., 364
BERNARD AND TOTTEN, 56
Berwick, town of, 258
BIENVILLE, JEAN BAPTISTE LE MOYNE DE, 5; 213; 217; 228; 341

Bill of Rights, 327
Birds, 94; 114; 316–319
Birds of America (Audubon), 304
Bird sanctuary established, 321
Black Code, The, 214
Black River, 66; retreat for wild game, 67
Bluff lands, 35; 43; 372
Board of Charities and Corrections, 336
Bogalusa, climate of, 253; educational facilities at, 253; geographical position of, 252; industries at, 252; mill at, 158; 164; 320; 374
Boré, Étienne de, 11; 217; 293; 304
Boyd, David F., 272; 359
Boyd, Thomas D., 359; 361
Boys' Pig Clubs, The, 156
Bragg, Braxton, 289
Brick, clay, and concrete, 112; 209
Bus lines, 92
Byrd, C. E., 275; 361

Cabildo, The, 226; 343
Cable, George W., 294; 298
Caffery, Donelson, 285
Calcasieu River, 34; 67
Calcasieu Ship Canal, 251
Caldwell, B. C., 361
Canals, 72; 88
Canning and by-products, 185
Capital, influence of in manufacturing, 193
Capuchins, The, 216
Carbon black, production of, 106; 179
Carondelet, Baron de, 217
Carroll, Dr. James, 262
Casket Girls, 214
Cattle, pure breeds imported, 151
Celotex, from bagasse, 200
Centenary College, 243; 364
Central Louisiana Fair, 248
Central Louisiana State Hospital, 368
Chaille, Dr. S. E., 290
Chalmette, Oaks, 311; plain of, 10; 231
Channels, connecting Red and Atchafalaya rivers, 63; length and navigable mileage of, 52
Charity Hospital of Louisiana, The, 365
Charivari, 237
Chopin, Kate, 297
Citrus fruits, 146; 372
Civil Code, The, 339
Claiborne, William C. C., 8; 344; 345
Clay deposits, 111; articles manufactured from, 182
Climate, 46; 48; 171; 219; 372
Coastal prairie region, 37; 44
Code Napoléon, 344; 348
Cole, Catherine, 300
Committee System, 329
Community of acquets and gains, 344; 345
Company of the Indies, 7
Confederate Girl's Diary, A (Dawson), 300
Conniff, John R., 361
Conservation, duties of Commissioner of, 334
Constitution, State, 327
Corn, production of, 138; 372
Corpus Juris Civilis (Justinian), 348

Cotton, 132–136; 372; clothing, 207; compressing, 203; cottonseed oil milling, 204; ginning, 203; mills, 204
Council of State at Versailles, 343
Court of the Châtelet, 341; 342
Covington, town of, 259
Creameries, location of, 152; 212
Crops, variety of, 132; 372; farm, 141–144
Crowley, town of, 80; 89; 259
Crozat, Antoine, 5
Custom of Paris, 341; 342

Dalrymple, W. H., 274
Dairying, 151–155
Davis, Jefferson, 232; 296; 364
Davis, Mollie Moore, 298; 300
Dawson, Sarah Morgan, 300
Delgado Art Museum, 232; 278
Delgado, Isaac, 278
Delgado, Isaac, Central Trades School, 234; 278; 365
De la Tour, 55; 213
Department of Justice, 332
Department of Conservation, creation of, 94; 334
De Ridder, center of trade, 259; location of, 259
De Soto, Hernando, 5
Destruction and Construction (Taylor), 290
Dimitry, Alexander, 271
Dixie Overland Highway, The, 89
Dodd College, 243; 365
Dolette Hills, 32
Dorsey, Sarah Ellis, 296
Dr. Sevier (Cable), 295
Drugs and chemicals, 211
Dry docks, 209; 223; 374
Dueling Oaks, 311

Eads, Captain J. B., 54; 220
East Louisiana State Hospital, 368
Educational advantages: public school system, 349–359; state institutions of learning, 359–365; 374
Elevated lands, 32; 43
Ellet, Charles, Jr., 56
"Evangeline Oak," 311
Executive department, 330; members of, 330
Eye, Ear, Nose, and Throat Hospital (New Orleans), 366

Farrar, Edgar H., 286
Father Thevis, 228
Figs, development of industry in, 147
First-bottom lands, 28
First settlement in state, 7
Fishing, economic importance of, 114; 183; fresh-water, 185; 325
Fish protection, 186
Five Islands, 35; 108
Food products, 207
Forests, the, 95–101; 158–168; 306; 372; economic problems created by, 97; state, location of, 322
Forestry Board, A, 334
Fortier, Alcée, 293; 295
Foster, Murphy J., 285
Franklin, town of, 69; 80; 259
Frasch process, The, 106
French Market, The, 227
Frost data, 47
Fruits, 146; 372

Fur, animals, 121–125; production, 186–189; 373
Furniture making, 172

Gallier, James, 296
Gas, production of, 103–106; 178–180
Gayarré, Charles, 217; 293; 295
Geological history, 25–40
"*Georgia Volunteer, A*" (Townsend), 297
German Coast, 16; 214
German Protestant Orphans' Home (New Orleans), 237
Glass making, raw materials used in, 209
Goats, 156
Gottschalk, Louis Moreau, 296
Grand Lake, 39; 66; 72; 323
Grandissimes, The (Cable), 295
Gravel, 26; production of, 112, 182
Great raft, The, 62; 240
Great Southern Lumber Company, 164; 252
Grimes Bluff, 30
Gulf Current, 37; 218
Gypsum, location of in state, 113

"Hagar" (Nicholson), 297
Halle de Boucheries, 227
Hammond, geographical location of, 258; highways and railroads at, 258; school facilities, 258; strawberries, 142
Hargrove, Hardy H., 275
Harris, G. D., 32
Harris, Joel Chandler, 299
Harris, T. H., 271; 273; 360
Haughery, Margaret, 217; 279
Haynesville, town of, 259
Health, department, duties of officers of, 264; problems in, 260–269; progress in matters of, 262
Health, State Board of, 260; 336; activities of, 266; chief duties of, 264; members of, 261; present organization of, 261
Health train, 264
Hesperia (Wilde), 294
Highland Sanitarium, 367
Highways, 88–90
Highway Commission, duties of, 335
Historical sketch of state, 5–23
History of Louisiana (Gayarré), 293
History of Louisiana (Martin), 293
Hogs, 155
Holt, Dr. Joseph, 291
Homer, town of, 259
Horses and mules, 155
Hospitals, 365–368
Houma, town of, 72; 80; 259
Howard Memorial Library (New Orleans), 279
Howe, William Wirt, 285
Humphreys and Abbott, 56

Iberville, 5
Illinois Central Railroad, 81
Indian War, 7
Industrial Canal, 221; 223
Inner Harbor Navigation Canal, 71; 73; 83; 220
International Trade Exhibition, The Permanent, 195; 225
Intracoastal Canal, 68; 72; 83

In War Time at La Rose Blanche (Davis), 298
Iron, manufacturing plant, 208; where found, 114

Jackson, General Andrew, 10; 217; 225
Jaconetta (Davis), 298
Jamison, Mrs. C. V., 300
Jefferson Highway, 62; 88; 241
Jefferson, Thomas, 8
Jesuits, first arrival of, 216
Jetties, how formed, 54; 65; 220
Johnston, General Albert Sidney, 232; 272; 289
Johnston, William Preston, 272; 359
Jones, Dr. Joseph, 291
Judiciary Department, courts composing, 331; election of judges to, 332
Justinian (*Corpus Juris Civilis*), 348

Kansas City Southern Railroad, 82
Keeny, J. E., 361
Kisatchie Wold, 33; 310
Kraft paper, manufacture of, 97; 169
Kruttschnitt, E. B., 286

Labor, influence of, 193
Lafayette, development of, 80; educational advantages at, 253; highways, 253; history of, 253; industries at, 253; Southwestern Louisiana Fair held at, 254; Southwestern Louisiana Institute located at, 253; 361
Lady Jane (Jamison), 300
Lady of the Lake Sanitarium, 246; 367
Lafittes, 217; 227
Lafrenière, 217
Lagniappe, 20; 23; 226
Lake Charles, development of, 80; form of government of, 252; geographical location of, 250; 374; imports and exports of, 68; industries at, 251; principal exports, 251; St. Patrick's Sanitarium located at, 367; sulphur mines at, 108; 251; 373
Lake Pontchartrain, 38; 71; 75; 88; 218; 231; 323
Lake Providence, town of, 259
Lakes, how formed, 38
Lake Salvador, 38; 72
Land of Evangeline, 69; 91
La Salle, Robert de, 5; 213; 228; 342
Law, John, 214
Lazear, Dr. Jesse W., 262
Legislative department, 328; features of, 329; powers of, 328; procedure of, 328
"Leah" (Nicholson), 297
Leather, manufacture of, 211
Leland University, 365
Levee, lines, length of, 40; new standard grade for, 57; system of, 55
Lewis, Dr. Ernest S., 292
Life of Henry Watkins Allen (Dorsey), 296
Lignite, 113
Limestone, 112; 182
Live-stock production, 149
Livingston, Edward, 281
Loess lands, 43

Logging, 160; value of long-leaf pine in, 310
Longfellow-Evangeline Park, 312
Long-leaf pine, hills, 34; 372; most important tree, 96
Louisiana, admitted to Union, 9; an agricultural state, 129; area of, 25; 129; classification of soil of, 41; 130; 372; climate of, 46; 372; date of purchase from France, 217; educational system of, 349–370; 374; famous men and women of, 270–305; gas production in, 105; government of, defined, 327–348; 375; health in, compared with other states, 267; historical sketch of, 5–23; industries in, 374; landscape and wild life of, 306–326; part of Atlantic Coastal Plain, 25; petroleum production, 174–178; physical features of, 25–48; purchase price of, 8; rainfall in, 47; 372; removal of capital, 12; secession of, 12
Louisiana and Arkansas Railroad, 81
Louisiana College, 364
Louisiana Laws, origin of, 339–348; peculiarities of, 345–348
Louisiana Polytechnic Institute, 256; 361
Louisiana Purchase, 8; 60
Louisiana Purchase Highway, 90
Louisiana Railway and Navigation Company, 82
Louisiana State Normal College, 257; 360
Louisiana State Penitentiary, 369
Louisiana State University, 359
Louisiana Training Institute for Boys, 362
Louisiana Training School for Girls, 362
Louisville and Nashville Railroad, 81
Loyola University, 234; 363
Lowlands, The, 35
Lumbering, a foremost industry, 158–165

Malarial fever, deaths from, 263; 371; fight against, 263
Mansfield, town of, 33; 88; 259
Manufacturing, 190–212
Mardi Gras, 20–23; 235
Market, influence of in manufacturing, 194
Marsh Island, 321
Marsh lands, 29; 35; 323; location of, 37; soil of, 44; 372
Martin, François Xavier, 292
McDonogh, John, 217; 237; 277
McIlhenny, E. A., 321
McNeese, John, 274
Mer Rouge, 99
Metal works, 208
Miles, Dr. M. A., 291
Mill work, 171
Milne, Alexander, 276
Minden, history of, 254; industries at, 255; schools at, 255
Minerals, 101–114; manufacture of, 208–211; production of, 373
Minor streams, 68–71 (Bayous: Bartholomew, D'arbonne, Teche, Courtableau, Portage, Fusilier, Bourbeau, Plaquemine Brûle, Lafourche, Bogue Chitto, and

Bogue Falia; Creeks: Thompson's and Chappepeela; Rivers: Bœuf, Mermentau, Vermilion, Tangipahoa, Pearl, Tchefuncte, Natalbany, Amite, and Comite)
Mississippi Bubble, 214
Mississippi Flood Control plan, 57; 58; 69
Mississippi River, 25; 38; 322; average width and depth of, 54; chief inland waterway, 52; climate of New Orleans regulated by, 218; discovery of, 5; drainage basin of, 52; 372; New Orleans founded on east bank of, 213; overflow of, 26; 55; quarantine station on, 261
Mississippi River Commission, 56; 58
Mississippi Valley, 25; 56; 59; 221
Missouri Pacific Railroad, 80
Molasses, process of making, 199
Monroe, educational advantages of, 250; geographical location of, 248; highways and railroad facilities, 249; importance of natural gas to, 105; 249; industries at, 249; institutions, 250; 367
Morgan City, 71; 73; 80; industries of, 172; 258
MORPHY, PAUL, 217; 304
Mosquito, control of, 260; enemy to health, 263
Moss, location of, 100; 208; 311
Municipalities, forms of government in, 333
Muskrat, economic importance of, 122; 124; 186–189
Napoleonic Code, 344
Natchitoches, 7; 88; geographical location of, 256; history of, 256; home of Art Colony, 257; in live-stock section, 257; State Normal College located at, 257
National Leprosarium, 369
Natural gas, 103; production of, 178; 221; 249
Naval stores, 96; 166
Negroes, 16; higher education of, 365
Newcomb, H. Sophie, College for Women, 234; 363
NEWCOMB, LOUISE LEMONNIER, 278; 363
New Iberia, development of, 80; geographical location of, 255; highways and railroads, 255; industries at, 255
NEWMAN, ISIDORE, 278; 365
New Orleans, America's most interesting city, 213–238; ceded to Spain, 7; date of founding, 7; 213; date of restoration to France, 8; educational advantages at, 233; Federal Naval Station located at, 223; geographical position of, 217–221; industries at, 221–225; largest city south of Mason and Dixon's line, 217; monuments in, 232; nation's second largest port, 217; 374; port of, 83–85
New Orleans Army Supply Base, 223
New Orleans-Hammond Highway, 90
New Orleans University, 365
NICHOLLS, FRANCIS T., 13; 285

Nicholls, Francis T., Industrial School, 234; 365
Nicholson, J. W., 273; 359
Nights in Arcadie (Chopin), 298
North Louisiana Sanitarium, 367
Noyan, 217
Nuts, 146; 308

Oakdale, town of, 113; 259
Oil, activities in, 101–103; 244; 373; Louisiana's rank in production of, 174–178; refining, 177
Old Creole Days (Cable), 295
Old Spanish Trail, 89; 255; 259
Opelousas, town of, 12; 259
Opelousas Hills, 30
Orchard fruits, 147
O'Reilly, 217; 343
Ouachita River, beauty of, 66; 191; 322
Oysters, 115–118; 183; 373
Ozone belt, 38; 253

Pakenham, Sir Edward, 10
Palmer, Dr. Benjamin, 287
Paper pulp, 97; manufacture of, 168–171
Parishes, government of, 332
Parker, John M., 359
Parrott, Mrs. Walter, 279
Pecans, production of, 147; 308
Pelican Highway, 90
Permanent International Trade Exhibition, The, 195; 225
Pershing Highway, 90; 255; 259
Petroleum, location and boring of wells, 175; production of, 102; 174; 221; storage and transportation of, 177
Place d'Armes, 213; 225
Plantation life, contributing factors to, 18–20
Plaquemine, town of, 73; 259
P. O. J. Cane, 136
Pointe-a-la-Hache Relief Outlet, 58
Polk, Leonidas, 288
Population, nationality of, 15
Port of New Orleans, Board of Commissioners of, 336; importance of, 83–85; 220
Pothier, 344
Poultry, 156
Powers of government, division of, 328
Power, influence of, 191
Poydras, Julien, 276
Prescott, A. T., 361
Progée, The, 344
Prosperity, factors contributing to 11; 14
Public Accounts, Supervisor of, 336
Public Belt Railroad, 82; 221
Public Service Commission, duties of, 336; membership, 335
Public School System, history of, 349–351; organization and administration of, 351–354; school revenues for, 354; twenty-five years of progress in, 355–357

Quadrupeds of America (Audubon), 304

Rainey Refuge, 321
Railroads, 77–82; factors in expansion of, 78
Rainfall, 47; 219; 372
Range hogs, a menace, 99

Raw materials, influence of in location of industrial plants, 191
Reclaimed land, definition of, 40; 45
Reconstruction period, 12
Red River, 28; 39; 52; 60–62; 77; 88; beauty of, 322; dispute in regard to boundary of, 60; length of, 60; 130; 133
Reed, Dr. Walter, 262
Religious affiliations, 17
Resources, natural, 94–125
Revised Civil Code, 339; 345; 346; 348
Rice, economic importance of, 202; milling of, 201; production of, 140; 372
Richardson, Henry, 296
Richardson, Mrs. Ida, 279
Richardson, Dr. Tobias G., 279; 291
Rigolets, 72
Ripley, Eliza, 300
Riverside Sanitarium, 368
Robinson, W. C., 361
Rockefeller Foundation, 321
Rosin, 96; 165–168
Roy, V. L., 361
Ruston, agricultural center, 256; educational facilities at, 256; industries at, 256

Sabine Pass, 67
Sabine River, 33; 37; 68
Sage, Mrs. Russell, 321
Salt, 108–111; 180; 221; 373; marshes, 35
Sanctuaries, wild-life, 320
Sand, 71; 112; 182; 223; 310
School progress, summary of, 355–357
Schumpert Memorial Sanitarium, 367
Sea-bottom plain, evidences of, 26
Second-bottom lands, 28
Semmes, Thomas J., 283
Sheep, 156
Sheib, Dr. E. E., 361
Shell, 38; 113; 182; 185; 223
Shell Beach Drive, 251
Shell fish, 114; 185
Sherman, William Tecumseh, 223; 359
Shipyards, 209; 374
Shreve, Captain Henry M., 240
Shreveport, 12; Charity Hospital located at, 366; development of, 80; geographical location of, 241; growth of, 240; history of, 240; industries at, 241; railroads and highways at, 241; schools and colleges at, 243; Tri-State Sanitarium at, 367
Shrimp, 118–121; 184; 373
Shrine Hospital for Crippled Children, 366
Silliman Institute, 365
Slidell, town of, 89; 259
Smallwood, Martha (Catherine Cole), 300
Smith, Dr. Alphonso, 298
Smythe, Dr. A. W., 292
Social Life in Old New Orleans (Ripley), 300
Soil, cause of deterioration of, 45; classification of, 41; 130; 372; conservation of, 45
Sonny (Stuart), 300
Souchon, Dr. Marion, 290

Soulé, 217
Southern Pacific Railroad, 80
Southern University and Agricultural and Mechanical College, 365
Southern Yacht Club, 231
South Pass, 54; 85
Southwestern Louisiana Fair, The, 254
Southwestern Louisiana Institute, 361
St. Francis Sanitarium, 367
St. Ildefonso, secret treaty of, 216
St. John's, 243
St. Louis Cathedral, 225
St. Louis Cemetery, 228
St. Martinville, town of, 80
St. Patrick's Sanitarium, 367
St. Roch's Chapel, 228
St. Vincent's, 243
State Board of Education, duties of, 337; membership, 336
State Colony and Training School, 368
State Constitution, 327
State Institutions of Learning, 359–362
State Normal College, 257; 360
State Sanitary Code, provisions of, 264
State School for the Blind, 362
State School for the Deaf, 362
State school system, 336; public schools, 349–357; state institutions of learning, 359–362
State Seal, The, 330; legend of, 375
Stegomia mosquito, 262
Steamship lines, 86–88; 220
Story of Education in Louisiana, The (Harris), 360
Straight University, 365
"Sugar Bowl, The," 136
Sugar, cane, 136–138; 372; economic importance of, 197; mills, location of, 199; 374; refining, 11; 197; 304
Sulphur, 106–108; 373; unlimited supply of, at New Orleans, 109; 113; 221; 251
Superintendent of Public Education, 337; 353
Superior Council, 341; 342
Surface features, 32
Syrup, annual output of, 200
System of Penal Law (Livingston), 281

Tar, 165–168
Tax Commission, duties of, 334; membership, 334
Taylor, Richard, 289
Taylor, W. E., 361
Taylor, Zachary, 12; 289
Telephone and telegraph lines, 82
Territory of Orleans, early history of, 8
Texas and Pacific Railway, 80
Thibodaux, town of, development of, 72; 80; 259
Third-bottom lands, 28
Tison, W. W., 361
Tobacco, 44; value of products in, 208
Touro Infirmary, 367
Touro, Judah, 276
Townsend, Mary Ashley, 297
Trade Exhibition, The Permanent International, 195; 225
Transportation and communication, 77–92; facilities of, 373

Trapping, economic importance of, 186; varieties of, 187; fur animals, 121–125
Treatise, scope of, 1
Tri-State Sanitarium, 367
Tulane, Paul, 278; 363
Tulane University, 234; 362
Turpentine, 96; 165–168

United States, southern boundary of fixed, 8
Uplands, 33; 43
Ursuline College, 364
Ursuline Convent, 216; 364
Ulloa, first Spanish governor, 217

Vermilion Bay, 37; 38; 71
Vieux Carré, 213; 216; 225
Volksfest, 237
Voting, method of, 337

Ward, C. W., 321
Warner, Dr. Beverly, 288
Warren Commission, 56
Warrington House, 226
Waterways, beauty of, 322; inland, 52–75; length of, 374
White, Edward Douglas, 282
White League, 13
Wild Bird Refuge, 255; 321
Wilde, Richard Henry, 294
Wild flowers, varieties of, 312–315
Wild-life resources, 114; 183 189; 373
Winds, 49
Winnfield, 110; 113; 182
Wood, distillation of, 168; preserving, 172
Wright, Sophie B., 286

Yellow fever, 261; deaths from before subjugation, 228; 262; 371; subjugation of, 261
You, Dominic, 227

Xavier University, 365